

SECTION 3

ELECTRICAL ADJUSTMENT

Model No. : **AG-HMC150P/AN, AG-HMC151E, AG-HMC152EN**
AG-HMC153MC, AG-HMC154ER

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1. Preparation of adjustment

When performing the electrical adjustment, the Camera Adjustment software and PC EVR software are used.

1-1. PC EVR Software (VVS0069)

1-1-1. Required tools and equipment for software

When the PC EVR software (VVS0069) is used, the following tools are required.

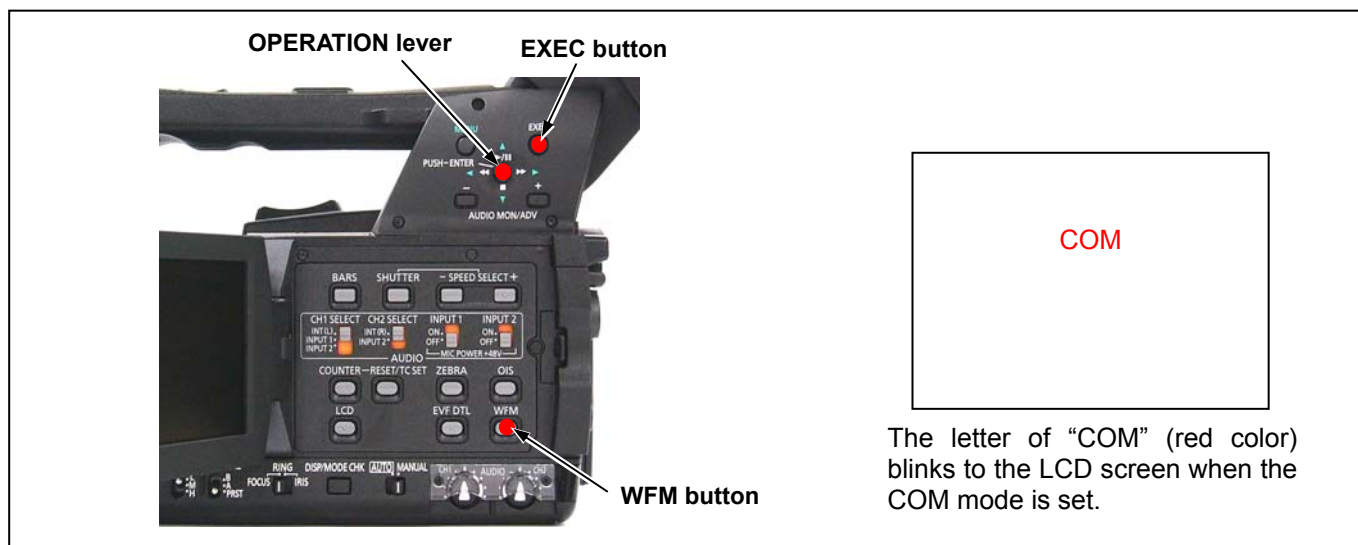
Name	Part Number	Pcs.	Remark
PC EVR software	VVS0069	1	Download from the Global Service WEB site.
USB driver	VVS0058	1	Download from the Global Service WEB site. Same driver as DVD-CAM, DVC-CAM
USB cable	---	1	A type ↔ mini B
DC cable	K2GJ2DZ00022	1	For Camera Recorder
AC Adaptor	DE-A35BA (For P model)	1	For Camera Recorder
	DE-A35CA (For E, EN and ER model)		
	DE-A35DA (For MC model)		
	DE-A35EA (For AN model)		
Personal Computer	---	1	*NOTE:

***OS: WINDOWS XP SP2**

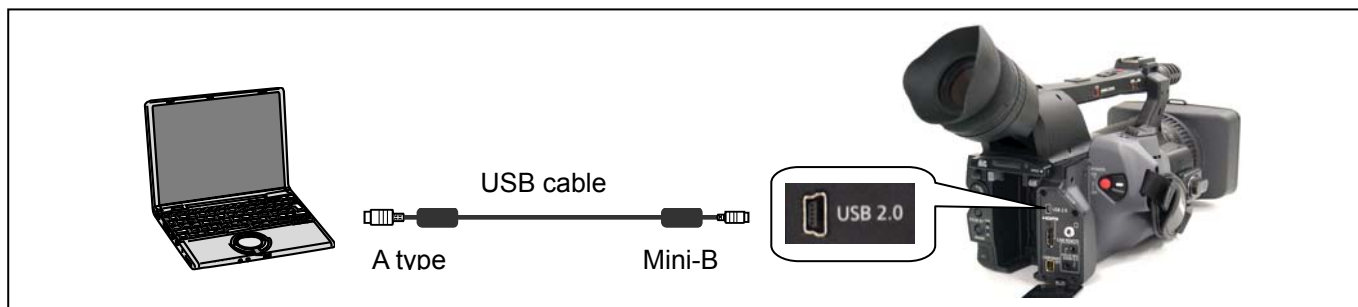
1-1-2. Connection

1. Install the USB driver to the PC (Refer to item “6-2-1. Installation method of USB driver (VVS0058)” in section 1).
2. Set the camera recorder to “COM” mode. Hold down the “STOP (Tilt the Operation lever in the ▼ directions)”, “EXEC” button and “WFM” button at the same time for three second or more. (The letter of “COM” blinks to the LCD screen when the COM mode is set.)

NOTE: To cancel the COM mode, execute the operation of the same button as the setting. (COM mode cannot be cancel if the power has been switched off and back on again)



3. Connect the USB cable between camera recorder and PC.



1-2. PC EVR Software (VVS0070) and Camera Adjustment software

1-2-1. Required tools and equipment for software

When the Camera Adjustment software(VVS0068) and PC EVR software(VVS0070) are used, the following tools are required.

Name	Part Number	Pcs.	Remark
Camera Adjustment software	VVS0068	1	Download from the Global Service WEB site.
PC EVR software	VVS0070	1	Download from the Global Service WEB site.
Measuring board	VFK1988	1	
Extension cable	VFK1989	1	
DC cable	K2GJ2DC00002 or VJA1128	1	For Measuring board
DC cable	K2GJ2DZ00022	1	For Camera Recorder
AC Adaptor	DE-A35BA (For P model)	2	For Camera Recorder and Measuring board
	DE-A35CA (For E,EN and ER model)		
	DE-A35DA (For MC model)		
	DE-A35EA (For AN model)		
9pin RS232C cross cable	---	1	
Personal Computer	---	1	*NOTE:

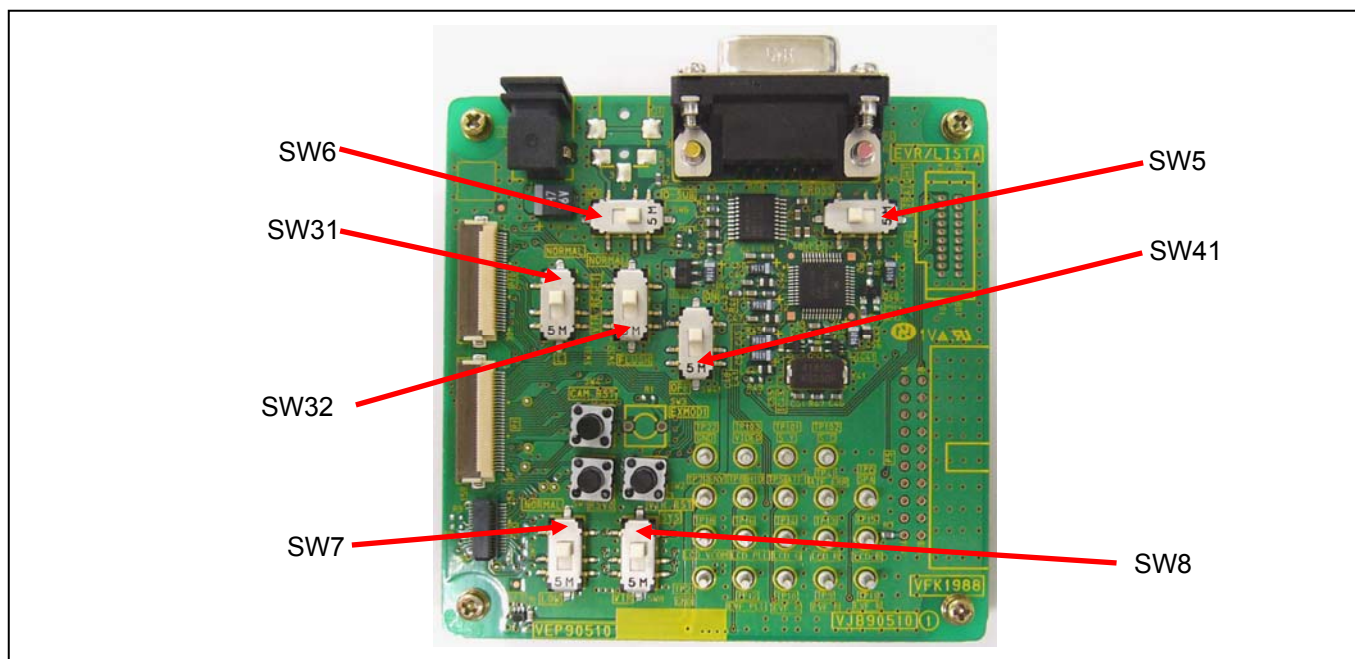
***OS: WINDOWS XP SP2**

1-2-2. Connection

1. Unless otherwise specified, set the switches on the Measuring Board as shown in the table below.

Name	Setting Position	Remark
SW5	CROSS	
SW6	D-SUB	
SW7	NORMAL	
*SW8	SYS	When PC EVR Software is used
	VTR	When Camera Adjustment Software is used
SW31	NORMAL	
SW32	NORMAL	
SW41	ON	

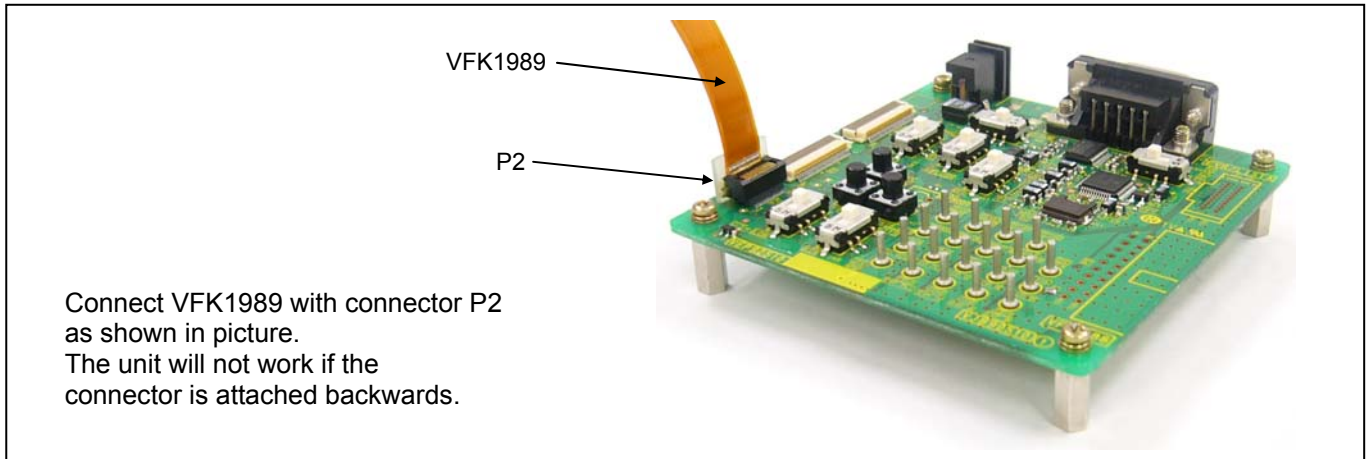
***NOTE:** SW8 is VTR/SYS selection switch. When the PC EVR Software is used, SW8 sets to the SYS side. When the Camera Adjustment Software is used, SW8 sets to VTR side.



2. Unscrew the 3 screws (A) as shown in figure and remove the REAR SIDE COVER.

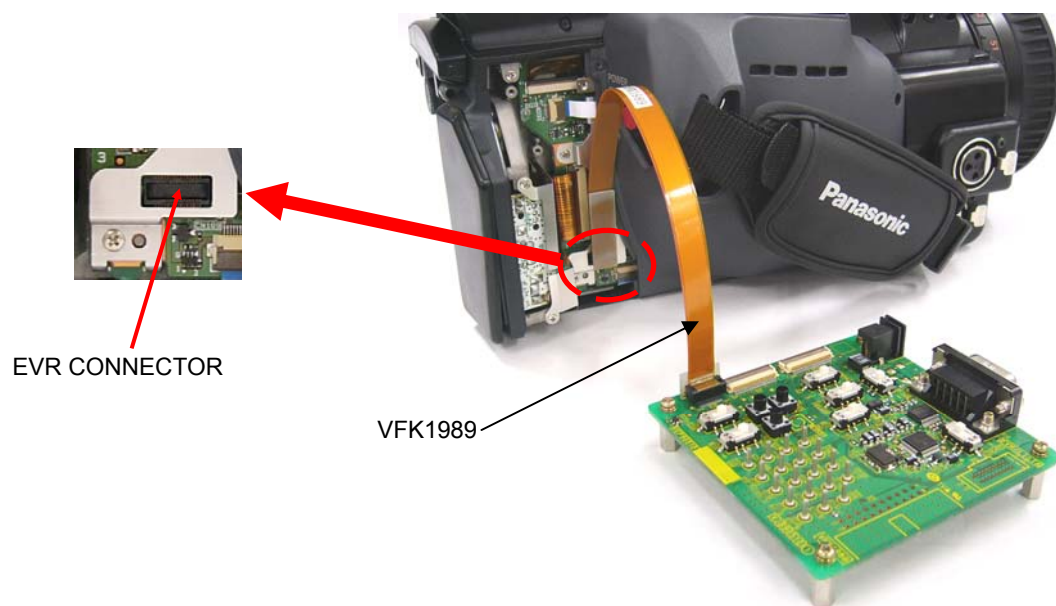


3. Connect the Extension Cable (VFK1989) to connector P2 on Measuring Board (VFK1988)

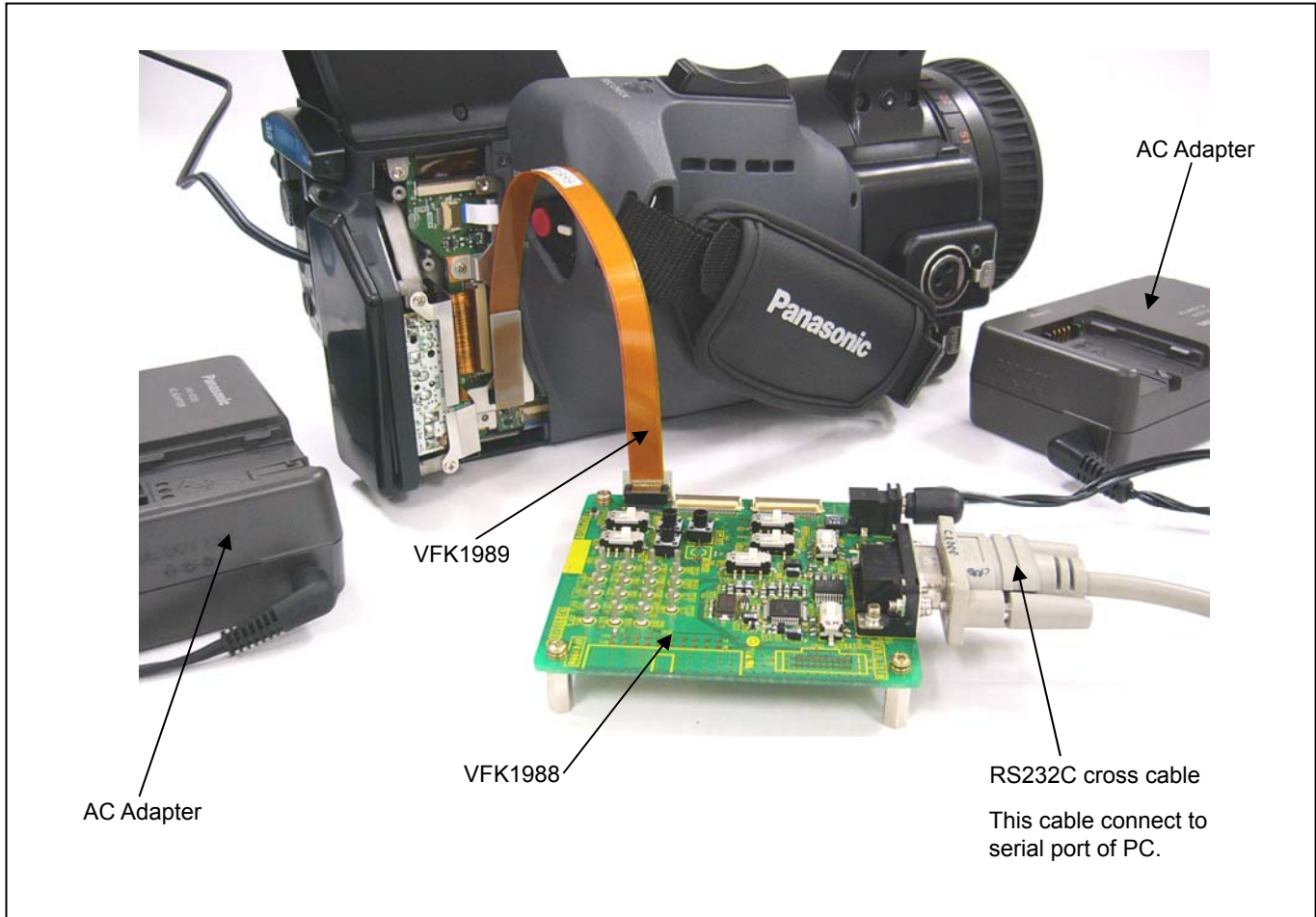


4. Connect the Extension Cable (VFK1989) to EVR connector in Unit. Then make sure that the direction of the VFK1989 is correct as shown in Figure.

When the VFK1989 is connected to EVR connector, be careful of the direction of connector on VFK1989. Please follow as shown in the figure.



5. Supply DC6V-9V to the Measuring Board (VFK1988). Please use the DC cable and AC Adapter to supply DC voltage to Measuring Board.
6. Connect a 9 pin RS-232C cross cable between the Measuring Board and RS-232C connector on Personal Computer as shown in Figure.



1-3. Adjustment item

Below indicated tools are required to perform each adjustment in addition to tools in introduced in item 1-1-1 and 1-2-1.

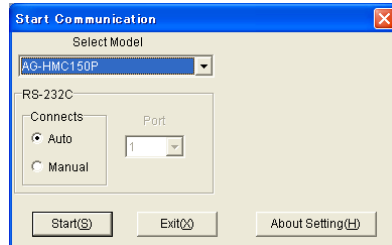
Please refer to the table below for the software used by each adjustment item.

Adjustment Item	Required Tool	Use software
D-Terminal Output Level Adjustment	Component Video Cable PIN-BNC Conversion Plug SD WFM	PC EVR Software (VVS0069)
Video Terminal Output Level Adjustment	SD WFM	
Zoom SW Center Value	Unnecessary	PC EVR Software (VVS0070)
Hall Amp	Unnecessary	Camera Adjustment Software (VVS0068)
Iris PWM	Unnecessary	
OISu	Unnecessary	
Zoom Tracking	Collimator (RFKZ0422) Collimator Adaptor SD WFM Halogen lamp	
White Shading	White chart SD WFM	
White Balance (Indoor)	Halogen lamp & Grayscale chart Color Pyrometer & Lux Meter	
White Balance (Outdoor)	CC filter (LB120) (VFK1347) CC filter (LBA2) (VFK1884) CC filter (LBB6) (VFK1888) 72mm Attachment Ring (VFK1809) CC Filter Holder (VFK1345) Step-down Ring (62mm-52mm) (VFK1346) Step-up Ring (43mm-49mm) (VFK1659) Step-up Ring (49mm-62mm) (VFK1660) Halogen lamp & Grayscale chart Color Pyrometer & Lux Meter	
White Balance (Palook) (NTSC model only required)	CC filter (LB120) (VFK1347) 72mm Attachment Ring (VFK1809) CC Filter Holder (VFK1345) Step-down Ring (62mm-52mm) (VFK1346) Step-up Ring (43mm-49mm) (VFK1659) Step-up Ring (49mm-62mm) (VFK1660) Halogen lamp & Grayscale chart Color Pyrometer & Lux Meter	
White Balance (White FL) (NTSC model only required)	CC filter (LB40) (VFK1341) CC filter (LBB2) (VFK1885) 72mm Attachment Ring (VFK1809) CC Filter Holder (VFK1345) Step-down Ring (62mm-52mm) (VFK1346) Step-up Ring (43mm-49mm) (VFK1659) Step-up Ring (49mm-62mm) (VFK1660) Halogen lamp & Grayscale chart Color Pyrometer & Lux Meter	
White Balance (Cool White) (PAL model only required)	CC filter (LB40) (VFK1341) CC filter (LBB2) (VFK1885) 72mm Attachment Ring (VFK1809) CC Filter Holder (VFK1345) Step-down Ring (62mm-52mm) (VFK1346) Step-up Ring (43mm-49mm) (VFK1659) Step-up Ring (49mm-62mm) (VFK1660) Halogen lamp & Grayscale chart Color Pyrometer & Lux Meter	

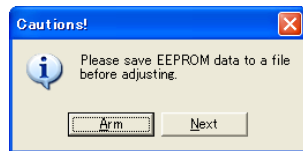
2. Adjustment procedure

2-1. Setup of PC EVR software (VVS0069)

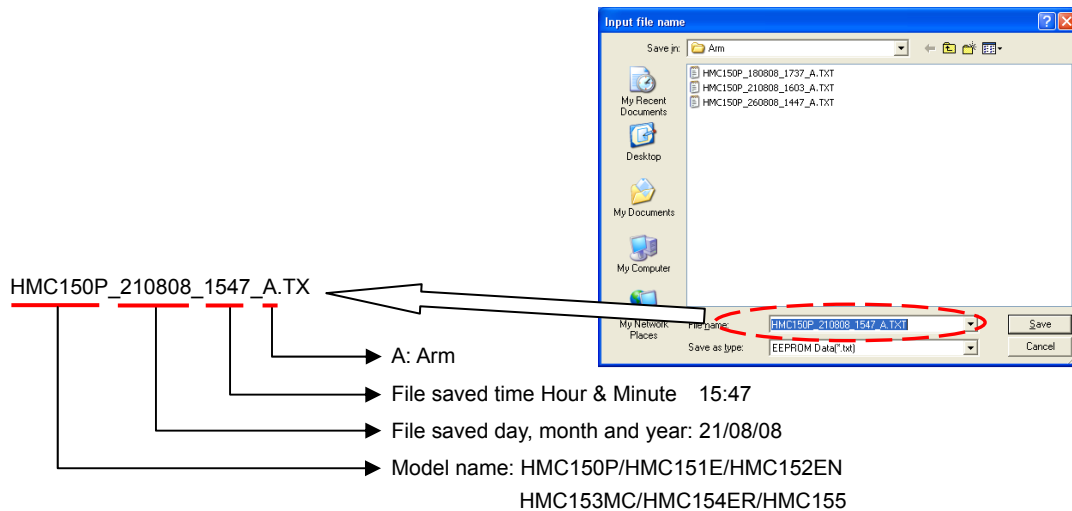
1. Copy all files of the PC EVR software (**VVS0069**) to the PC.
2. Supply power to the Camera-Recorder and turn power ON.
3. Set the camera recorder to “**COM**” mode.
4. Connect the USB cable between camera recorder and PC.
5. Start up the PC EVR software by double-clicking “**VVS0069.exe**”. The **Start Communication** screen will appear.
6. Select the model in “**Select Model**” box and click “**Start(S)**” button on **Start Communication** screen.



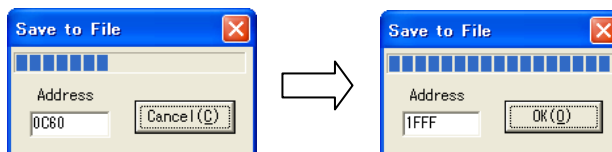
7. When the communication between the PC and the Camera-Recorder has been succeeded, the following message appears.
8. When the EEPROM data is saved, “**Arm**” button is clicked. When the EEPROM data does not saved, click the “**Next**” button to open the main menu screen (go to step 12).



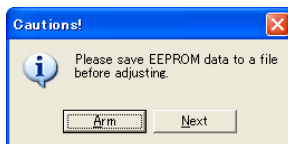
9. When the “**Arm**” button is clicked, **Input file name** screen appears to saving data. Save EEPROM of Arm with file name currently displayed.



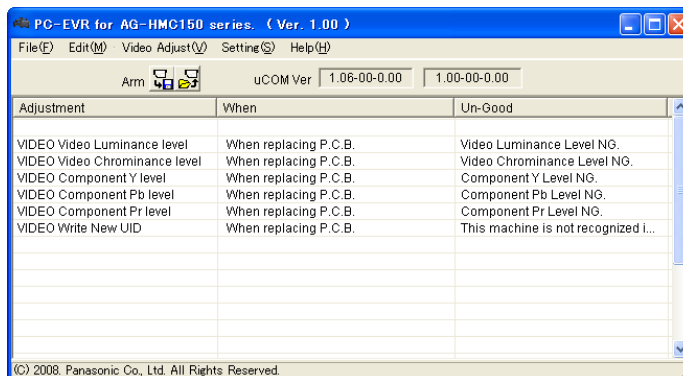
10. After confirming the file name, click “**Save**” button on **Input file name** screen. While saving data, progress bar is displayed. When “**OK(O)**” button is displayed, data saving is complete.



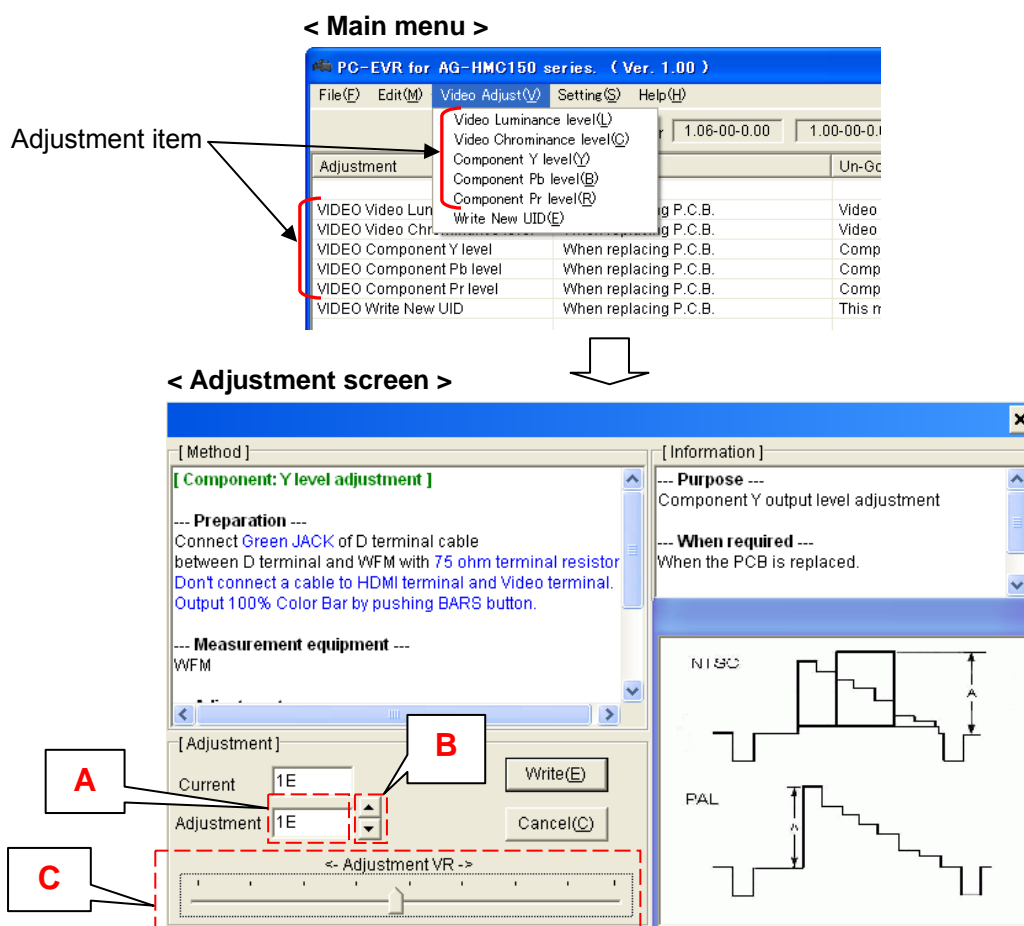
11. Clicking “**OK(O)**” button on **Save to File** screen, the following message appears again. Click the “**Next**” button to open the main menu screen.



12. Main menu screen is displayed as follows.



13. When each adjustment item of the “**Video Adjust(V)**” menu (Or adjustment item of the main screen) is selected, each adjustment screen is displayed.



- A: Adjusting value with Adjustment VR or Adjustment button is displayed.
 B: Clicking this Adjustment button, Adjustment value and the output level is changed.
 C: Move this Adjustment VR to left or right slowly. Adjustment value and the output level is changed.

2-2. D-Terminal Output Level Adjustment

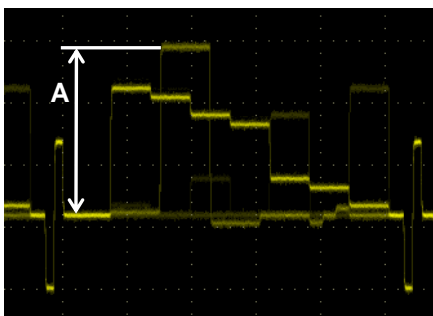
NOTE: Please execute the adjustment to both systems NTSC and PAL when you adjust AG-HMC151E. The SYSTEM FREQ can be selected by setting menu (SYSTEM FREQ / OTHER FUNCTIONS / Setting menu).

NOTE: Please do not connect the cable with the HDMI terminal and the VIDEO terminal when you execute the D-Terminal Output Level adjustment.

1. Set the item “**REC FORMAT**”(RECORDING SETUP / Setting menu) to “**1080/60i**” → For NTSC model
1. Set the item “**REC FORMAT**”(RECORDING SETUP / Setting menu) to “**1080/50i**” → For PAL model
2. Set the camera recorder to “**COM**” mode.
3. Press **BARS** button to output a color bars signal.
4. Connect the WFM to the COMPONENT Y OUT with 75ohm termination.
NOTE: Component video cable and PIN-BNC conversion plug are used.
5. Boot up the PC EVR software and open the main menu screen.
6. Select “**Component Y level**” on main menu screen, Adjustment screen will appear on screen.
7. Adjust Y level “**A**” by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
8. After adjustment is completed, click “**Write(E)**” button to close the Adjustment screen.

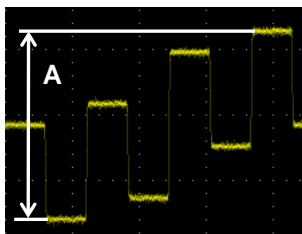
$$A = 700\text{mV} \pm 14\text{mV}$$

The pedestal level is a standard.



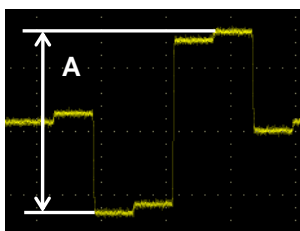
9. Connect the WFM to the COMPONENT Pb OUT with 75ohm termination.
NOTE: Component video cable and PIN-BNC conversion plug are used.
10. Select “**Component Pb level**” on main menu screen, Adjustment screen will appear on screen.
11. Adjust Pb level “**A**” by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
12. After adjustment is completed, click “**Write(E)**” button to close the Adjustment screen.

$$A = 525\text{mV} \pm 11\text{mV}$$



13. Connect the WFM to the COMPONENT Pr OUT with 75ohm termination.
NOTE: Component video cable and PIN-BNC conversion plug are used.
14. Select “**Component Pr level**” on main menu screen, Adjustment screen will appear on screen.
15. Adjust Pr level “**A**” by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
16. After adjustment is completed, click “**Write(E)**” button to close the Adjustment screen.

$$A = 525\text{mV} \pm 11\text{mV}$$



2-3. Video Terminal Output Level Adjustment

NOTE: Please execute the adjustment to both systems NTSC and PAL when you adjust AG-HMC151E. The SYSTEM FREQ can be selected by setting menu (SYSTEM FREQ / OTHER FUNCTIONS / Setting menu).

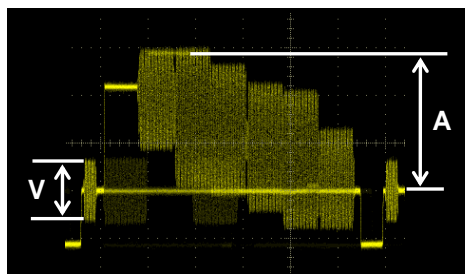
NOTE: Please do not connect the cable with the HDMI terminal and the D-terminal when you execute the Video Terminal Output Level adjustment.

<For NTSC model>

1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/60i"**.
2. Connect the WFM to the VIDEO OUT with 75ohm termination.
3. Set the camera recorder to **"COM"** mode.
4. Press **BARS** button to output a color bars signal.
5. Boot up the PC EVR software and open the main menu screen.
6. Select **"Video Luminance level"** on main menu screen, Adjustment screen will appear on screen.
7. Adjust Luminance level **"A"** by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
8. After adjustment is completed, click **"Write(E)"** button to close the Adjustment screen.
9. Select **"Video Chrominance level"** on main menu screen, Adjustment screen will appear on screen.
10. Adjust Chrominance level **"V"** by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
11. After adjustment is completed, click **"Write(E)"** button to close the Adjustment screen.

For NTSC model

A = 714mV ± 14mV
V (Burst) = 286mV ± 6mV

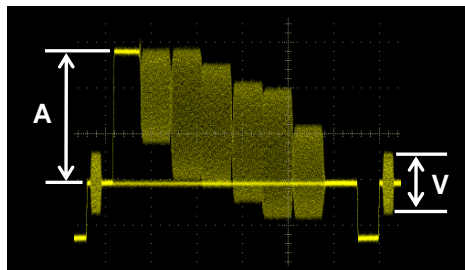


<For PAL model>

1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/50i"**.
2. Connect the WFM to the VIDEO OUT with 75ohm termination.
3. Set the camera recorder to **"COM"** mode.
4. Press **BARS** button to output a color bars signal.
5. Boot up the PC EVR software and open the main menu screen.
6. Select **"Video Luminance level"** on main menu screen, Adjustment screen will appear on screen.
7. Adjust Luminance level **"A"** by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
8. After adjustment is completed, click **"Write(E)"** button to close the Adjustment screen.
9. Select **"Video Chrominance level"** on main menu screen, Adjustment screen will appear on screen.
10. Adjust Chrominance level **"V"** by the Adjustment button or Adjustment VR on Adjustment screen so that it is within specification.
11. After adjustment is completed, click **"Write(E)"** button to close the Adjustment screen.

For PAL model

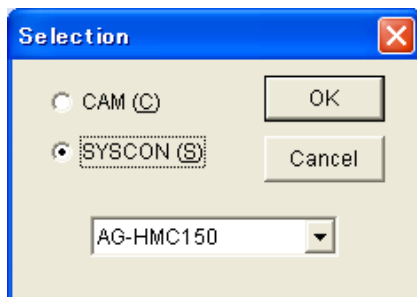
A = 700mV ± 14mV
V (Burst) = 300mV ± 6mV



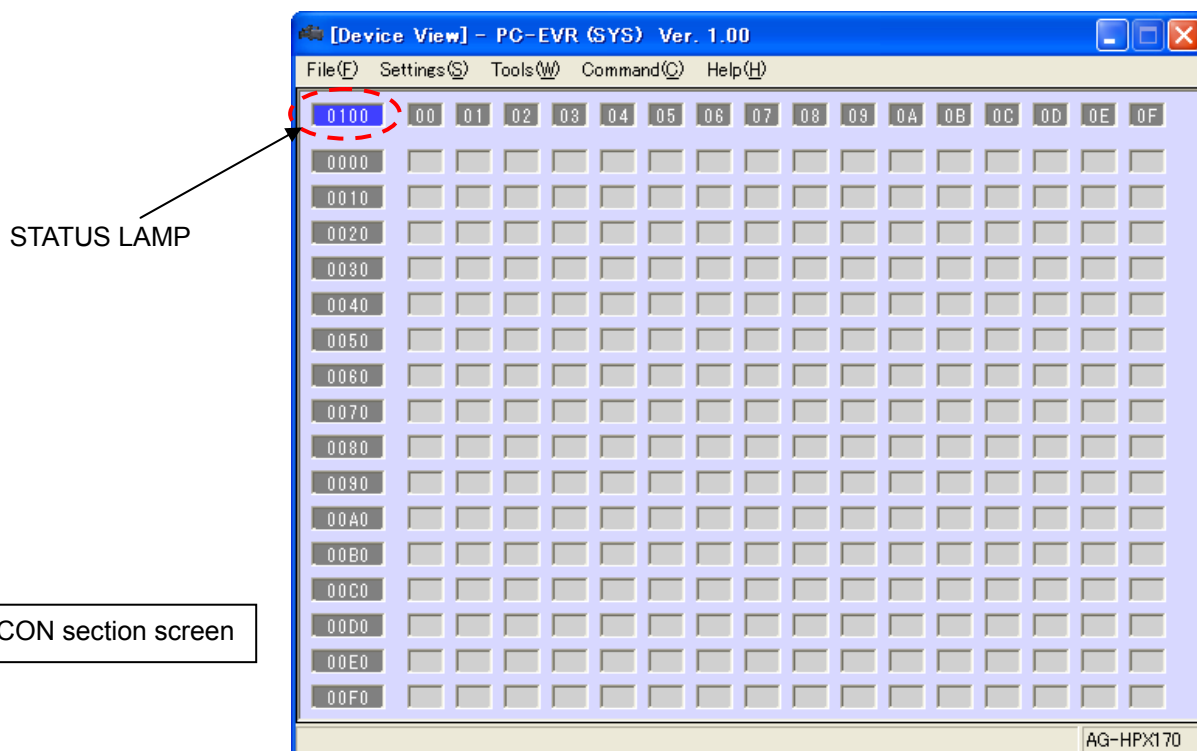
2-4. Setup of PC EVR software (VVS0070)

1. Copy all files of the PC EVR software (**VVS0070**) to the PC.
2. Supply power to the Camera-Recorder and turn power ON.
3. This camera recorder is set to “**CAM**” mode.
4. Start up the PC EVR software by double-clicking “**VVS0070.exe**”. The following screen will appear.

NOTE: **VVS0070** corresponds to AG-HVX200/A series, AG-HPX500 series and AG-HPG10. The model can be selected on the following screen.



5. Select the “**CAM(C)**” or “**SYSCON(S)**” according to the adjustment item and click “**OK**” button. The following screen will appear and when communication between the PC and the Camera-Recorder has been succeeded, blue is displayed to the status lamp.

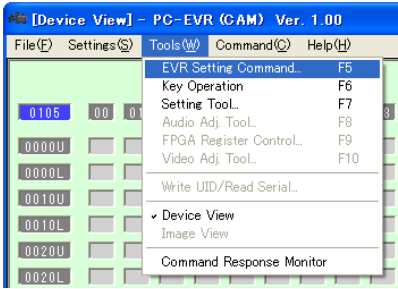

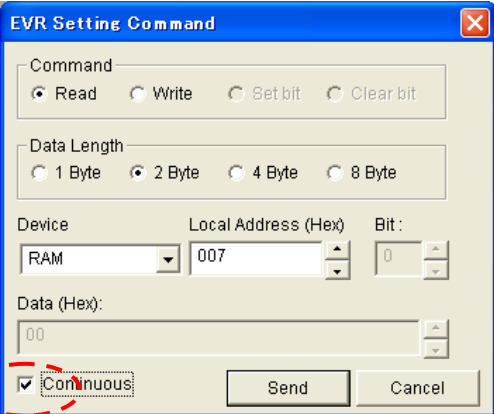


6. The communication status between the PC and the Camera-Recorder can be confirmed with the status lamp as following color.

Not Connected : black
Connected : blue
Reading : green
Writing : red

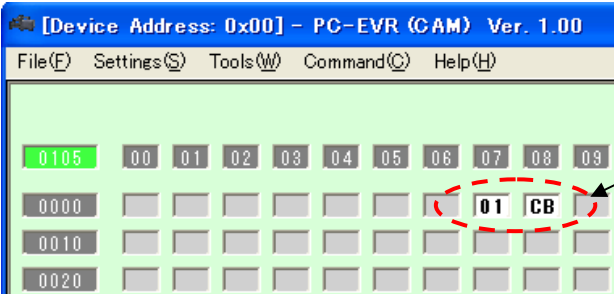
2-5. Zoom SW center value Adjustment

1. Set the **AUTO/MANUAL** switch of camera recorder to “**MANUAL**” side.
2. Select “**CAM(C)**” section after start up the PC EVR software, and click “**OK**” button.
3. Select “**EVR Setting Command**” in “**Tools(W)**” menu and set each item on **EVR Setting Command** screen as follows.

Command	Read
Data Length	2Byte
Device	RAM
Local Address(Hex)	0007

4. Click “**Send**” button, the data of 0007 and 0008 address is displayed, and confirm that the status lamp is green.



Take notes of numeral value in “**Data**” box.
ex.)
0007 address: 01
0008 address: CB

Readout the data of zoom position at T side

5. Press T side button of zoom SW on the Grip cover to T position fully and release the finger from the button slowly.
6. Take notes of numeral value in “**Data**” box (Refer to the above figure).
7. Repeat three times from the above steps 5 to 6.
8. Select the minimum value among three measurement value.

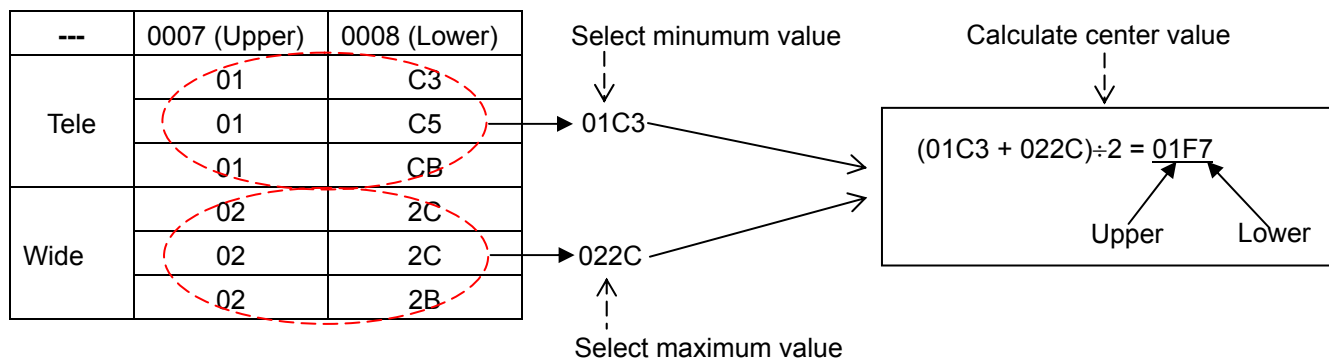
Readout the data of zoom position at W side

9. Press S side button of zoom SW on the Grip cover to W position fully and release the finger from the button slowly.
10. Take notes of numeral value in “**Data**” box (Refer to the above figure).
11. Repeat three times from the above steps 9 to 10.
12. Select the maximum value among three measurement value.

Calculation of zoom SW center value

13. Calculate the center value with the minimum value of T side and the maximum value of W side as follows.

<For example>



Writing the data of zoom SW center value

14. Set each item on **EVR Setting Command** screen as follows.

ex.) When inputting as 01,F7

Command	Write
Data Length	2Byte
Device	EEPROM
Local Address(Hex)	0E22

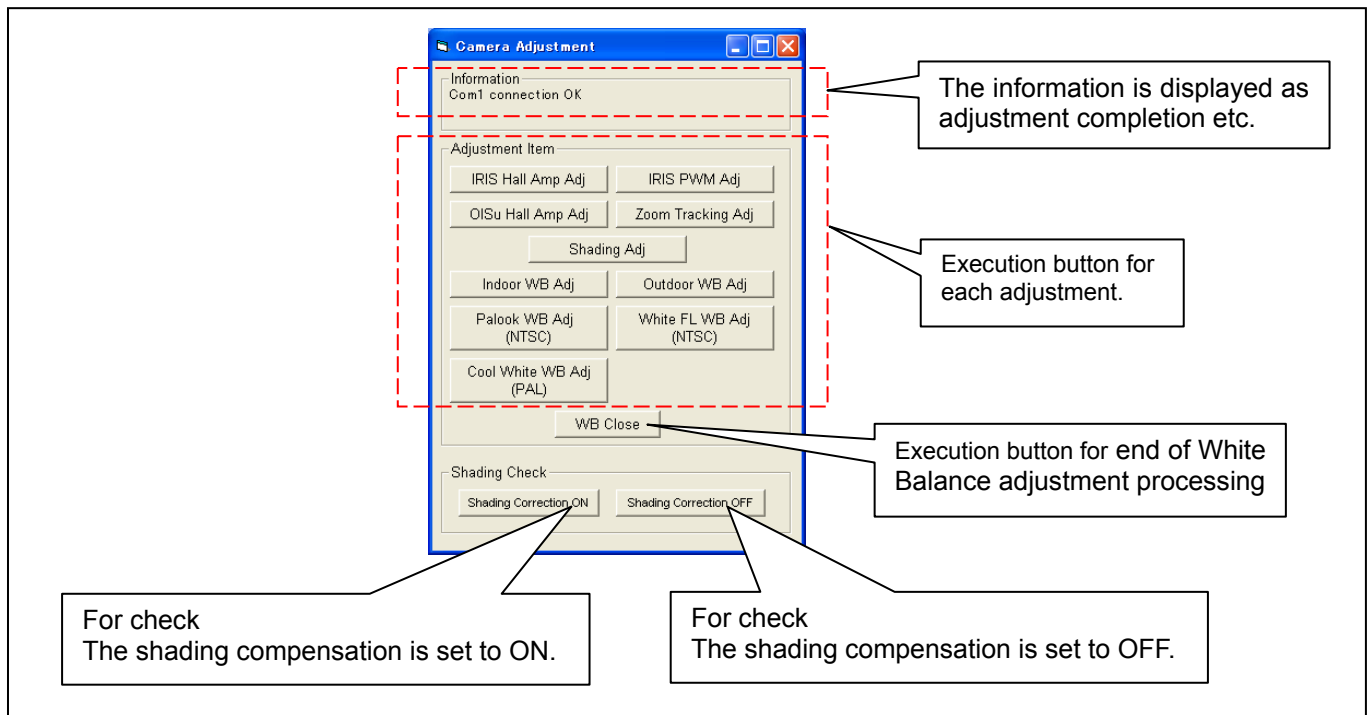
15. Input the zoom SW center value, which is calculated at step 13, in “**Data(Hex)**” box and click “**Send**” button.

Example: Input “**01,F7**” when the zoom SW center value is “**01F7**”.

16. Operate the zoom SW on the Grip cover and confirm that zoom operation works smoothly.

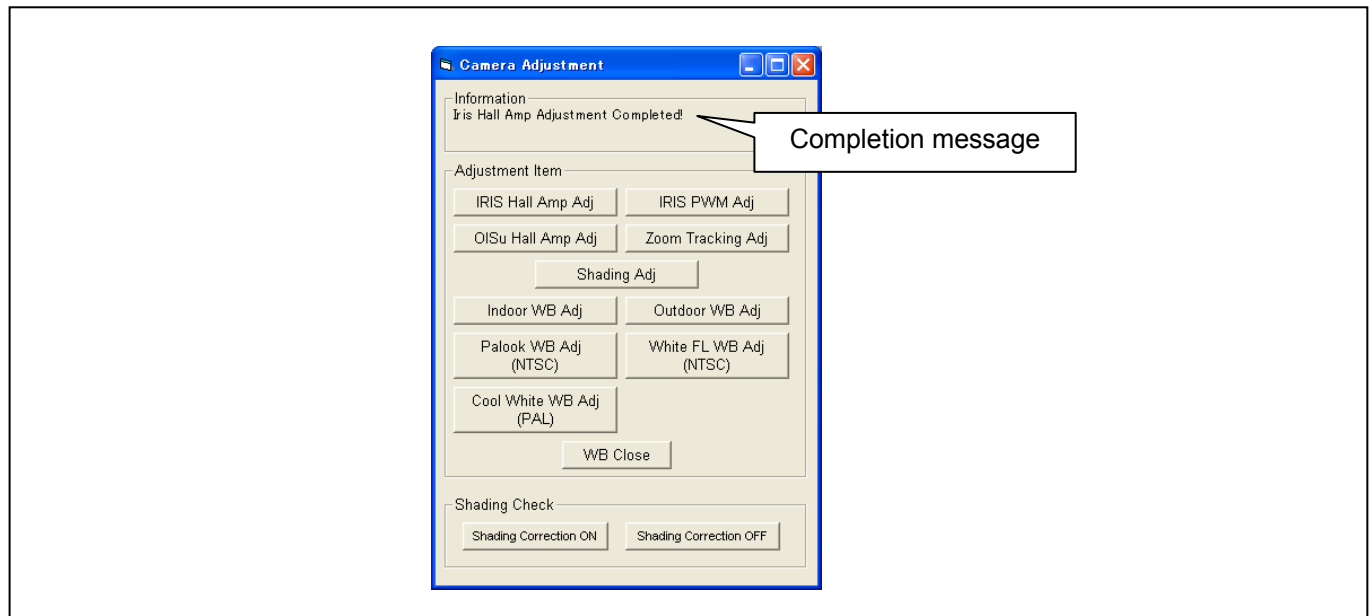
2-6. Setup of Camera Adjustment software

1. Copy all files of the Camera Adjustment software (**VVS0068**) to the PC.
2. Set the camera recorder to **"CAM"** mode.
3. Set the **SW8** on measuring board to **"VTR"** side.
4. Start up the Camera Adjustment software by double-clicking **"Camera Adjustment Software.exe"**. The **Camera Adjustment** screen is displayed.



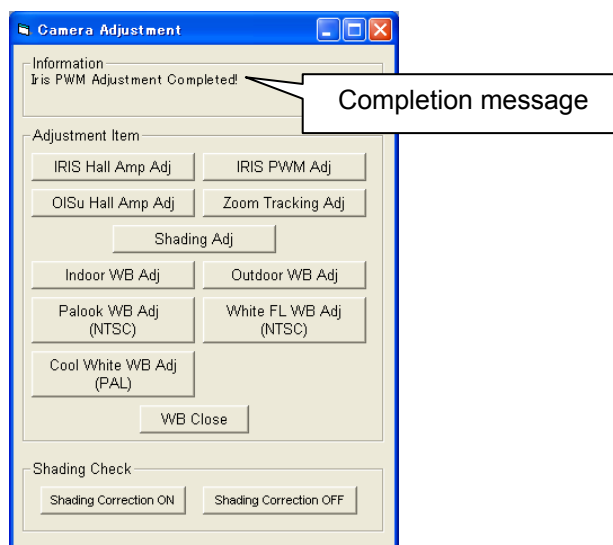
2-7. Hall Amp Adjustment

1. Clicking **"IRIS Hall Amp Adj."** button on **Camera Adjustment** screen, automatic adjustment starts.
2. When the adjustment is completed, the message **"Iris Hall Amp Adjustment Completed!"** is displayed on the **Camera Adjustment** screen.



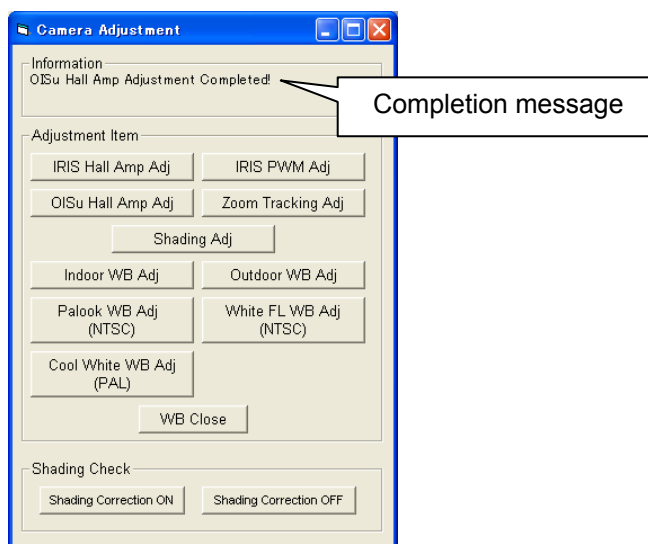
2-8. Iris PWM Adjustment

1. Clicking “**IRIS PWM Adj.**” button on **Camera Adjustment** screen, automatic adjustment starts.
2. When the adjustment is completed, the message “**Iris PWM Adjustment Completed!**” is displayed on the **Camera Adjustment** screen.



2-9. OISu Adjustment

1. Clicking “**OISu Hall Amp Adj.**” button on **Camera Adjustment** screen, automatic adjustment starts.
2. When the adjustment is completed, the message “**OISu Hall Amp Adjustment Completed!**” is displayed on the **Camera Adjustment** screen.



2-10. Zoom Tracking Adjustment

1. Set the each switch of camera recorder as follows.

- GAIN switch: L (0dB)
- WHITE BAL switch: B
- BARS button: OFF
- AUTO/MANUAL switch: MANUAL
- ZOOM switch: SERVO
- ND FILTER switch: OFF
- IRIS: MANUAL

2. Set the Collimator (RFKZ0422) to the Collimator Adapter.

NOTE: Please refer to next page for the method of installing the Collimator (RFKZ0422) in the Collimator Adapter.

3. Set the Collimator (RFKZ0422) with the Collimator Adapter to the front of Lens.

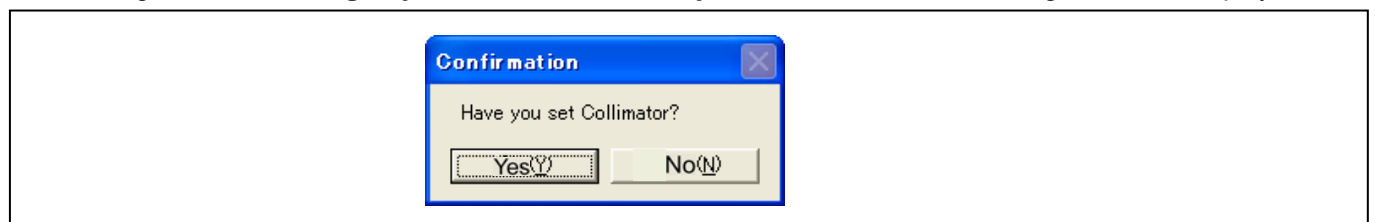
4. Connect the WFM to the VIDEO OUT with 75ohm termination.

5. Set the **IRIS** to **"MANUAL"**.

6. Adjust the position of lens unit and collimator so that the center of chart is always located at the center of monitor when moved between T and W.

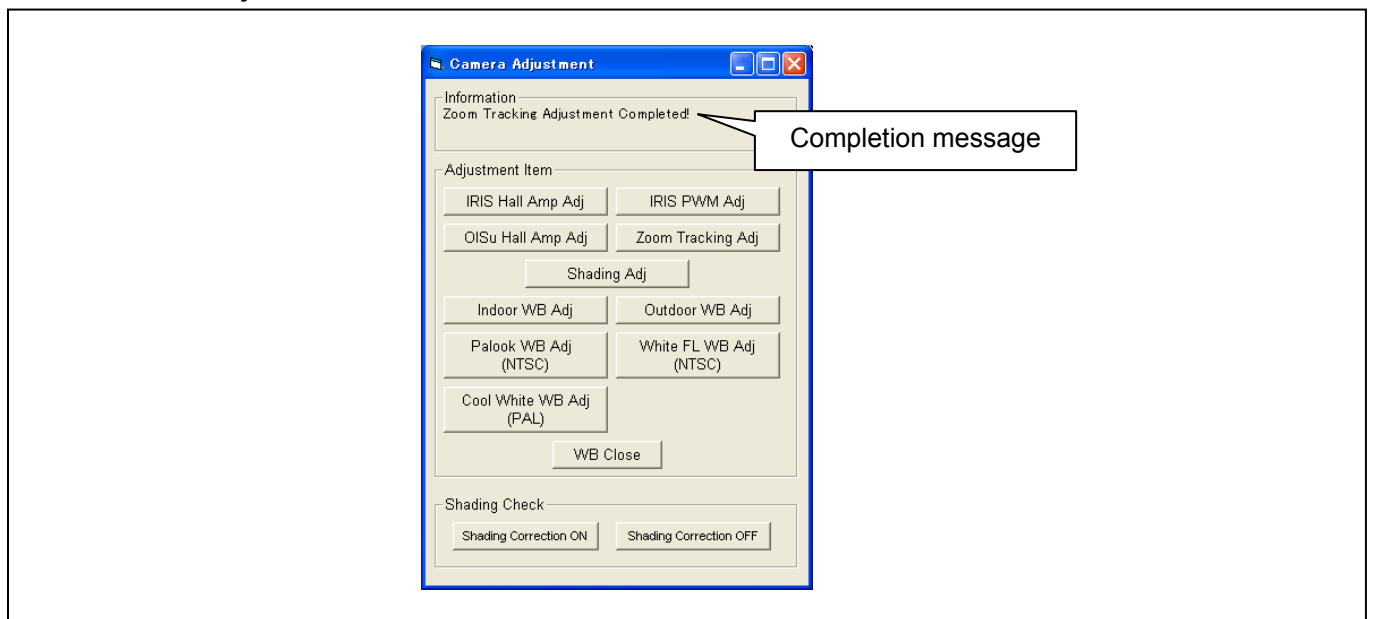
7. Confirm that the white level of signal at white portion of chart (Collimator) is about 50%(30 to 70%) when the camera recorder set to full telephoto position. If it is not, adjust iris dial or shutter so that the white level of signal is become about 50%.

8. Clicking **"Zoom Tracking Adj."** button on **Camera Adjustment** screen, the following window is displayed.



9. Clicking **"Yes(Y)"** button on **Confirmation** screen, automatic adjustment starts.

10. When the adjustment is completed, the message **"Zoom Tracking Adjustment Completed!"** is displayed on the **Camera Adjustment** screen.



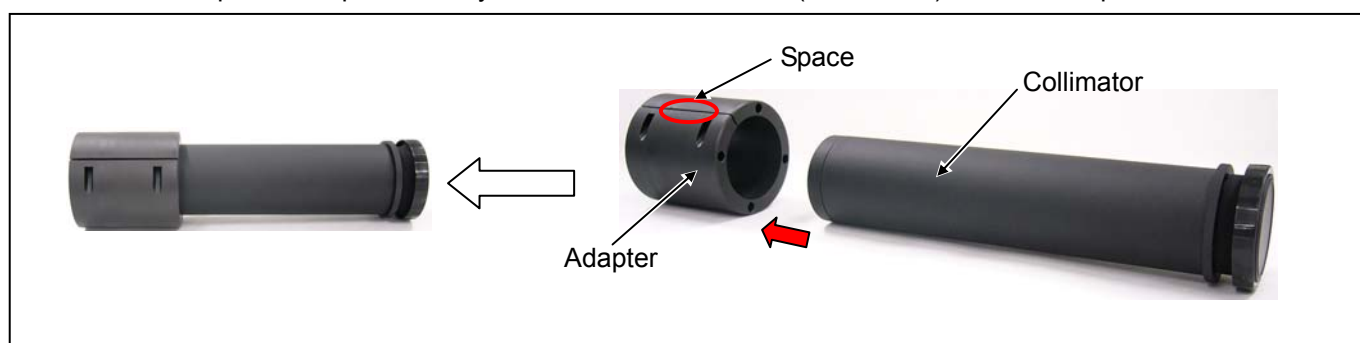
< Method of installing collimator (RFKZ0422) >

1. The collimator adapter is composed of the following parts.



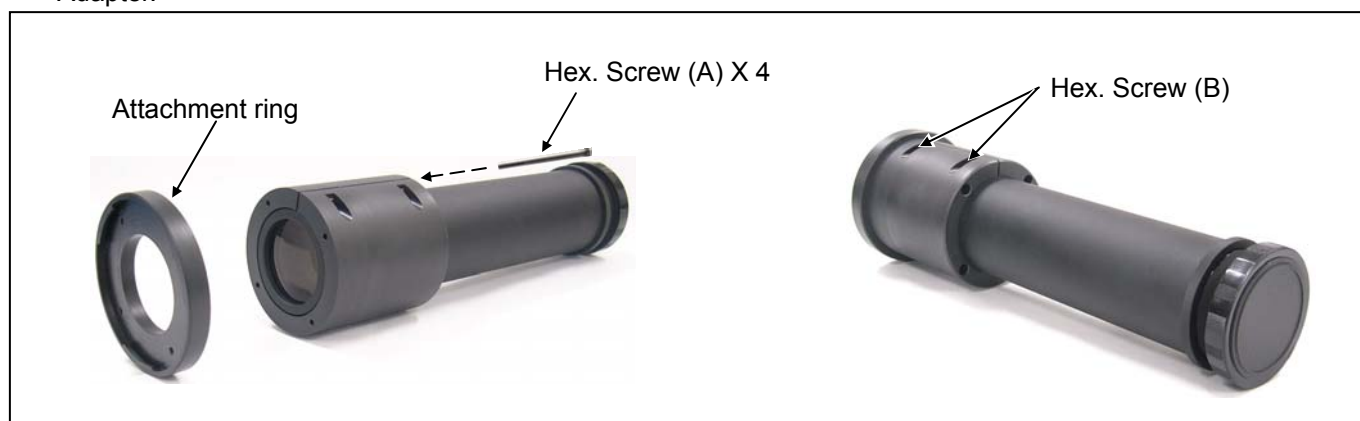
2. Insert Collimator (RFKZ0422) in the adapter while expanding the space as shown in figure.

NOTE: Please expand the space when you remove the Collimator (RFKZ0422) from the adapter.



3. Tighten the 4 hex. screws (A) and install the Attachment ring to adapter as shown in figure.

4. Tighten the 2 hex. screws (B) as shown in figure and the Collimator (RFKZ0422) is fixed to the Collimator Adapter.



5. Set the Collimator (RFKZ0422) with the Collimator Adapter to the front of Lens as shown in figure.

NOTE: In the weight of the Collimator and the Collimator Adapter, the camera recorder inclines as shown in figure.

Please execute the adjustment with the camera recorder made the horizontal as something is put under the Collimator Adapter.

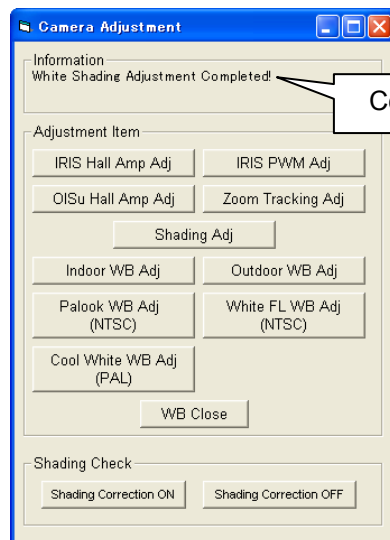


2-11. White Shading Adjustment

1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/60i"** → For NTSC model
1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/50i"** → For PAL model
2. Set the each switch of camera recorder as follows.
 - GAIN switch: L (0dB)
 - WHITE BAL switch: B
 - BARS button: OFF
 - AUTO/MANUAL switch: MANUAL
 - ZOOM switch: SERVO
 - FOCUS switch: OFF
 - IRIS: AUTO
3. Connect the WFM to the VIDEO OUT with 75ohm termination.
4. Set the **IRIS** to **"AUTO"**.
5. Shoot the white chart so that the full screen is white.
6. Confirm that the white level of signal is about 70 to 90%. If it is not, adjust the brightness of subject (white chart) or shutter so that the white level of signal is become about 70 to 90%.
NOTE: F number should be in the range of F2.8 to F8.0.
7. Clicking **"Shading Adj."** button on **Camera Adjustment** screen, the following window is displayed.



8. Clicking **"Yes(Y)"** button on **Confirmation** screen, automatic adjustment starts.
9. When the adjustment is completed, the message **"White Shading Adjustment Completed!"** is displayed on the **Camera Adjustment** screen.

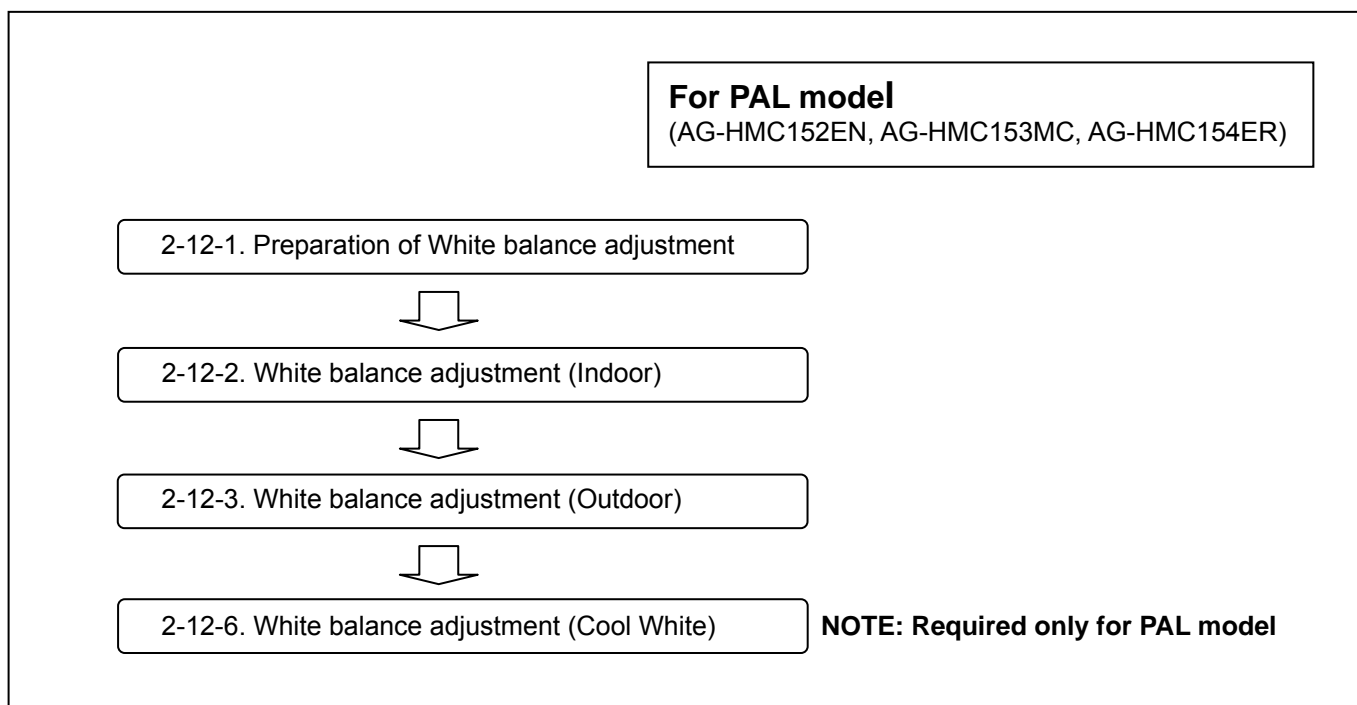
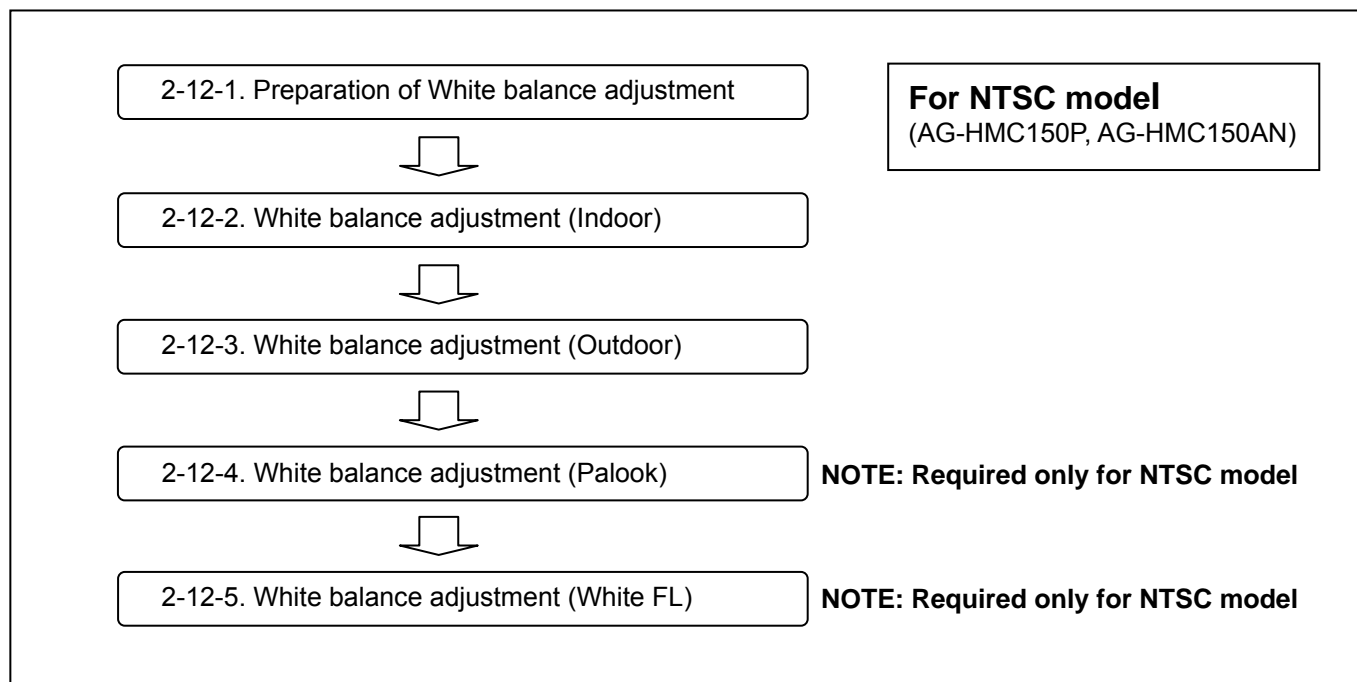


Completion message

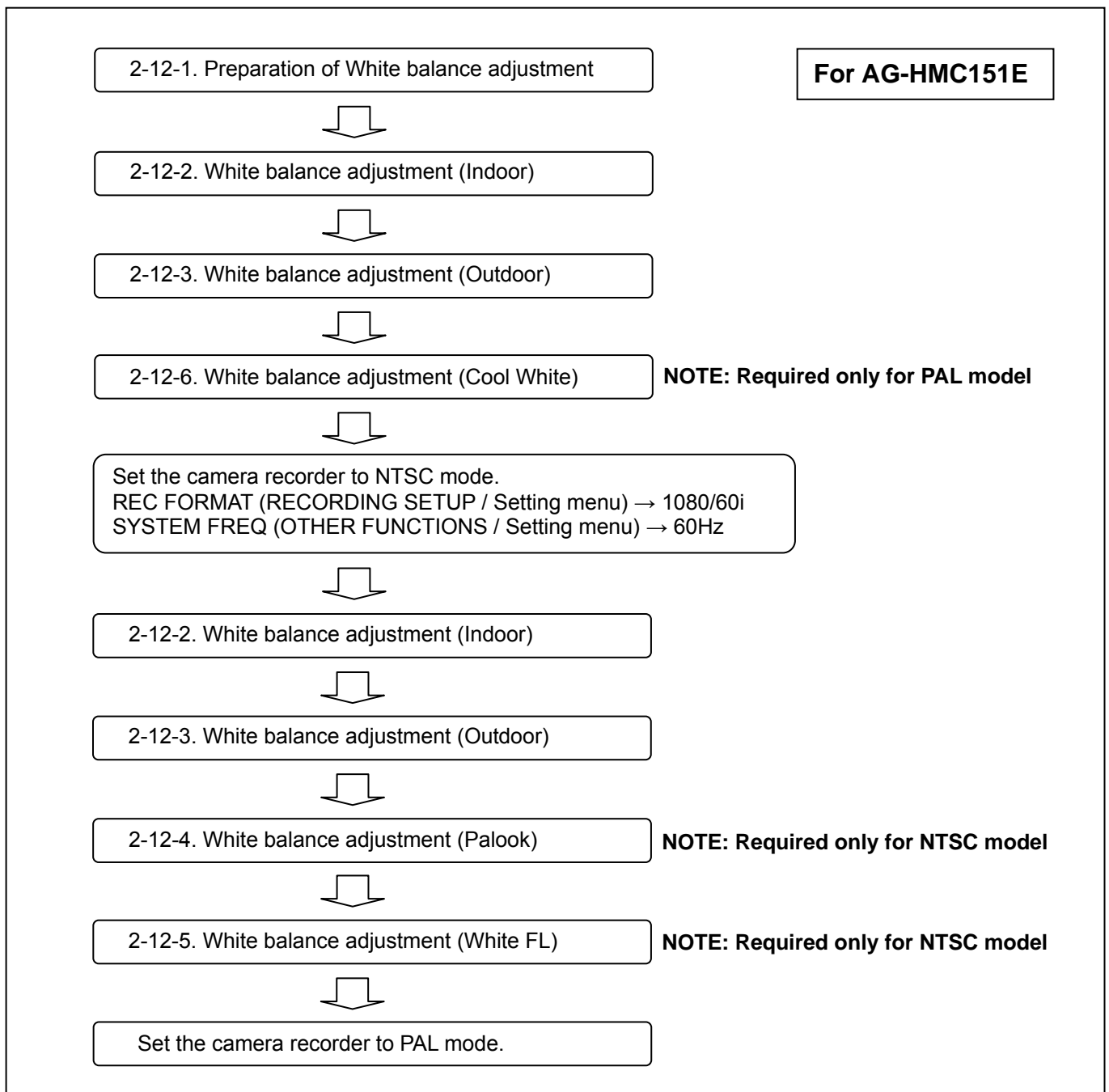
2-12. White Balance Adjustment

Please adjust it according to the following flow chart when you adjust the white balance.

NOTE: Please execute the adjustment to both systems NTSC and PAL when you adjust AG-HMC151E (Refer to flow chart on next page).



NOTE: Each White Balance Adjustment (Indoor, Outdoor, Palook, White FL and Cool White) can be executed individually. Please refer to the item “2-12-7. Notes when the white balance is adjusted” for notes when it individually adjusts it.

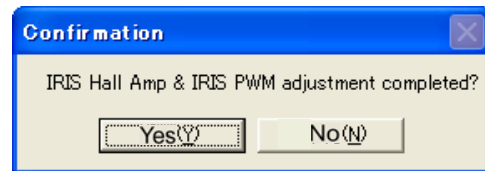


2-12-1. Preparation of White Balance Adjustment

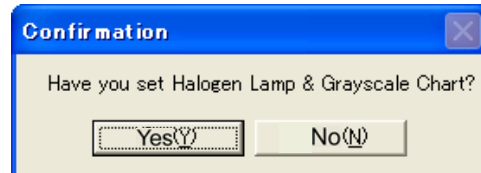
1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/60i"** → For NTSC model
1. Set the item **"REC FORMAT"**(RECORDING SETUP / Setting menu) to **"1080/50i"** → For PAL model
2. Set the each switch of camera recorder as follows.
 - GAIN switch: L (0dB)
 - WHITE BAL switch: PRE 3.2K
 - BARS button: OFF
 - SHUTTER button: OFF
 - AUTO/MANUAL switch: MANUAL
 - ND FILTER switch: OFF
 - FOCUS switch: OFF
 - IRIS: AUTO
3. Set the **IRIS** to **"AUTO"**.
4. Aim the Camera-Recorder at grayscale chart under the Halogen lamp condition (3200K, 2000Lux).
5. Shoot the grayscale chart so that fit the picture to the frame of grayscale chart.

2-12-2. White Balance Adjustment (Indoor)

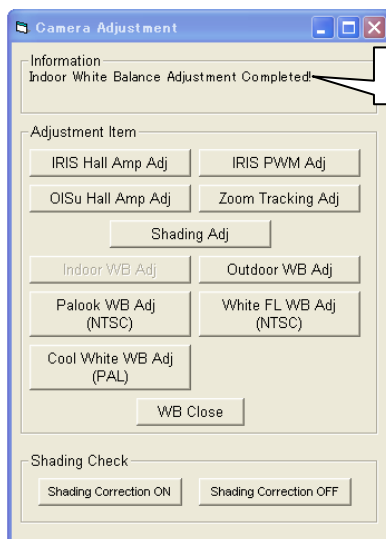
1. Clicking “Indoor WB Adj.” button on **Camera Adjustment** screen, the following window is displayed.



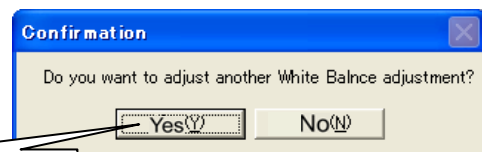
2. Clicking “Yes(Y)” button on above **Confirmation** screen, the following window is displayed.



3. Clicking “Yes(Y)” button on above **Confirmation** screen, automatic adjustment starts.
4. When the adjustment is completed, the message “Indoor White Balance Adjustment Completed!” is displayed on the **Camera Adjustment** screen.
5. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.
6. Clicking “Yes(Y)” button on below **Confirmation** screen, the message “Execute next White Balance Adjustment” is displayed on the **Camera Adjustment** screen. Please execute next adjustment (2-12-3. White Balance Adjustment (Outdoor)).

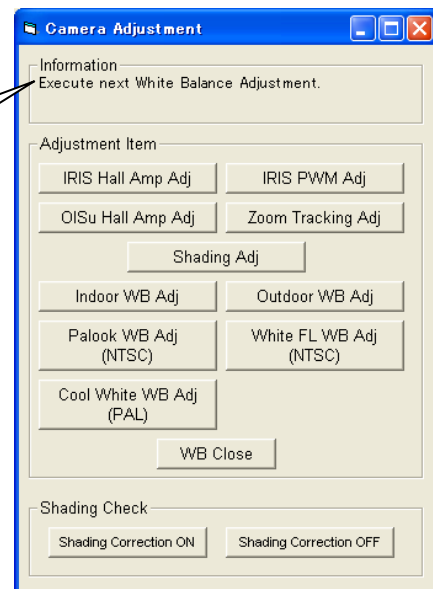


Completion message



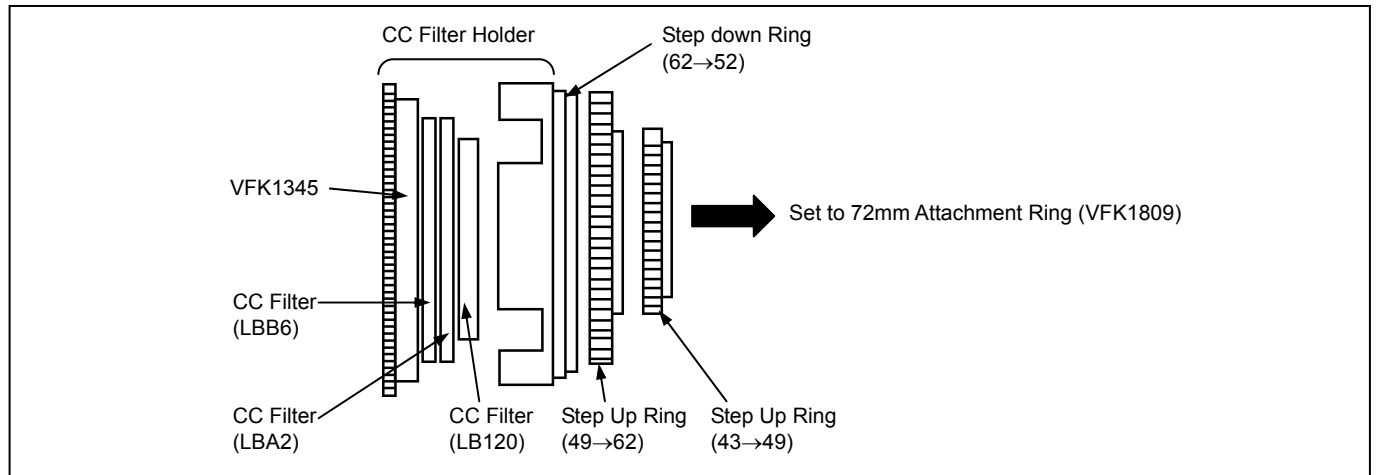
Click the “Yes(Y)” button

Execution message

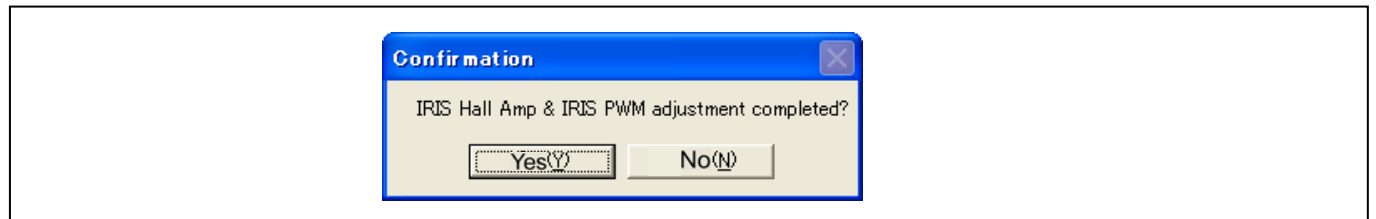


2-12-3. White Balance Adjustment (Outdoor)

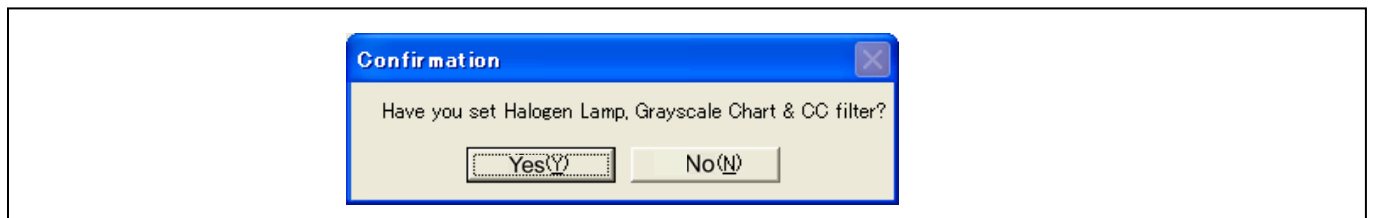
1. Set the Color Conversion filters (LB120: VFK1347), (LBA2: VFK1884) and (LBB6: VFK1888) to the CC Filter Holder (VFK1345).
2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



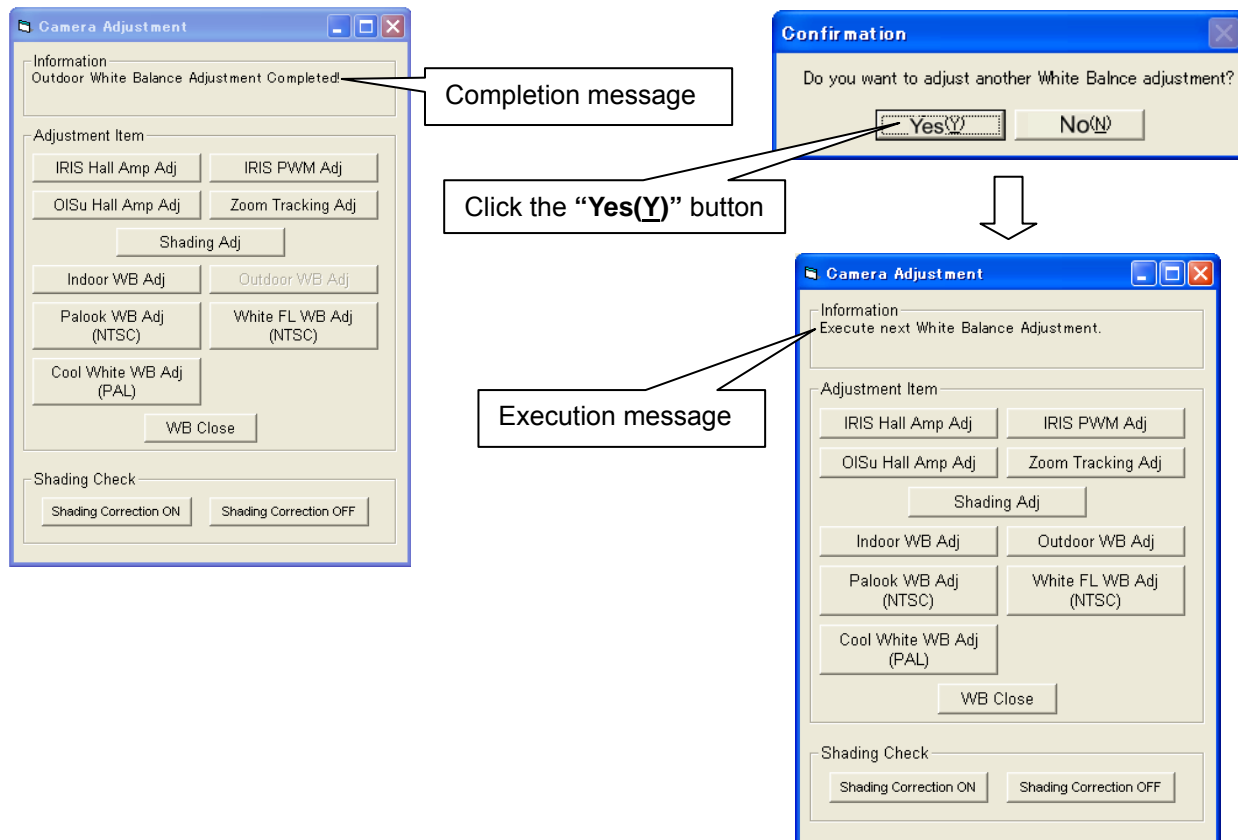
5. Clicking "**Outdoor WB Adj.**" button on **Camera Adjustment** screen, the following window is displayed.



6. Clicking "**Yes(Y)**" button on above **Confirmation** screen, the following window is displayed.

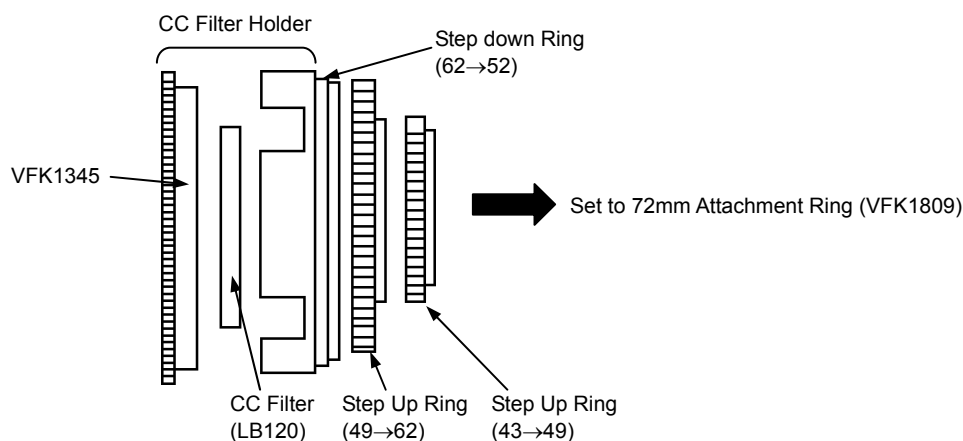


7. Clicking "**Yes(Y)**" button on above **Confirmation** screen, automatic adjustment starts.
8. When the adjustment is completed, the message "**Outdoor White Balance Adjustment Completed!**" is displayed on the **Camera Adjustment** screen.
9. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.
10. Clicking "**Yes(Y)**" button on **Confirmation** screen as shown in next page, the message "**Execute next White Balance Adjustment**" is displayed on the **Camera Adjustment** screen. Please execute next adjustment (2-12-4. **White Balance Adjustment (Palook)** for NTSC or 2-12-6. **White Balance Adjustment (Cool White)** for PAL).

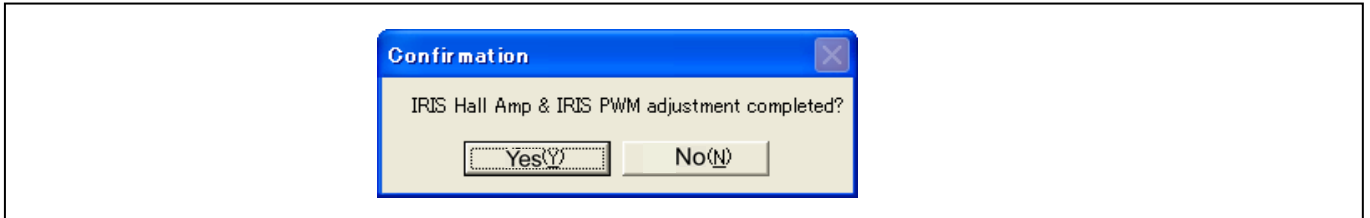


2-12-4. White Balance Adjustment (Palook) (Required only for NTSC model)

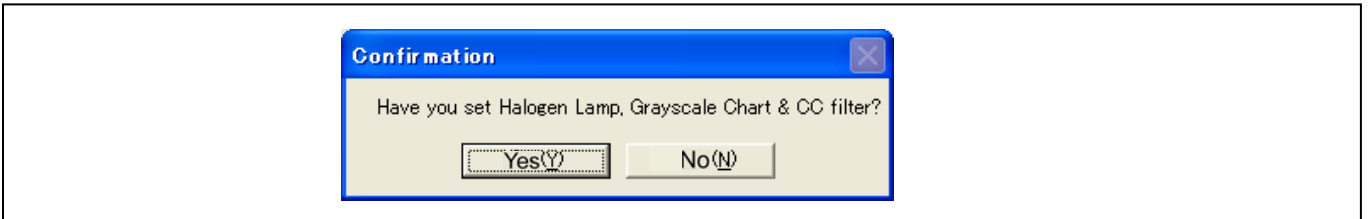
1. Set the Color Conversion filter (LB120: VFK1347) to the CC Filter Holder (VFK1345).
2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



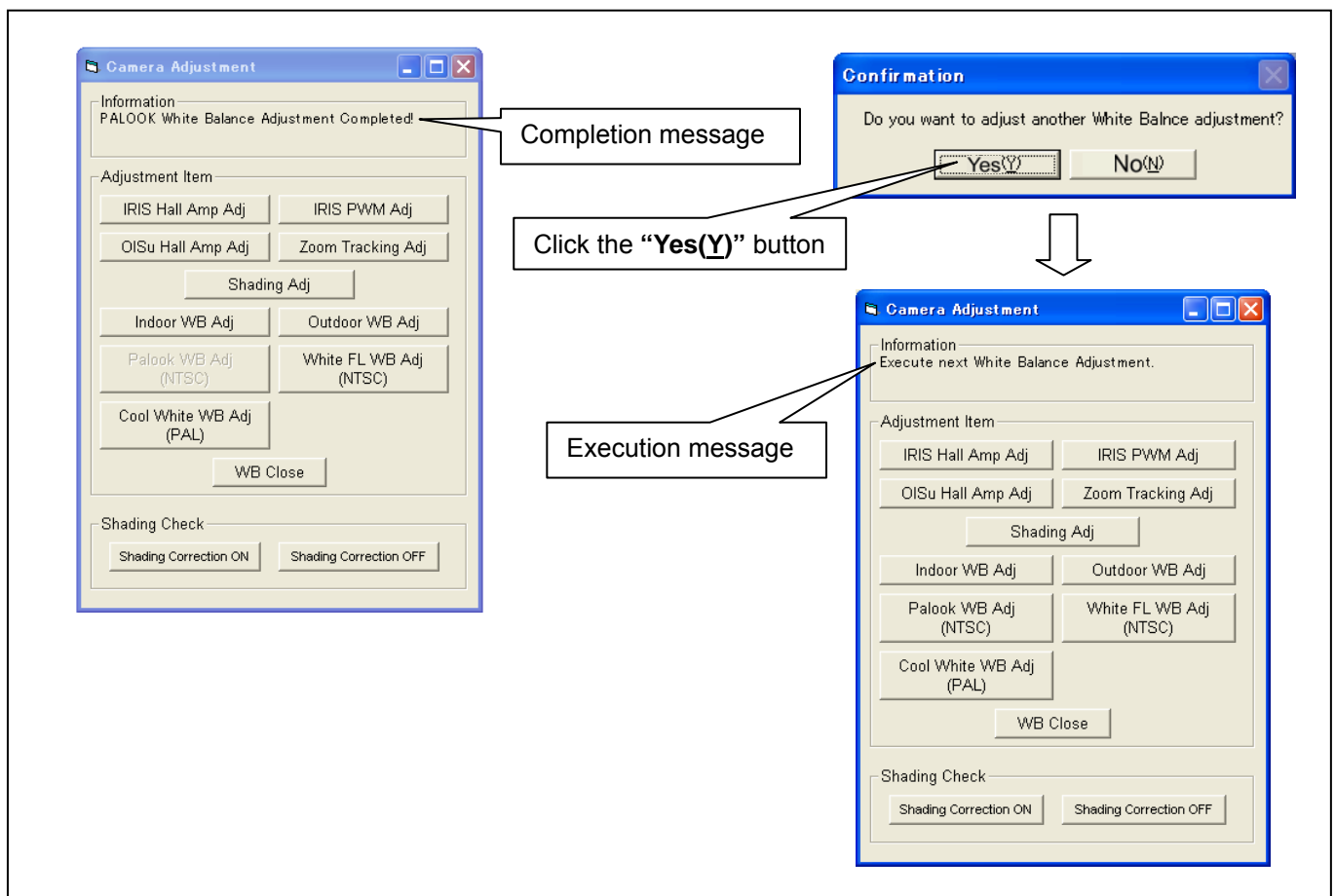
5. Clicking “**Palook WB Adj. (NTSC)**” button on **Camera Adjustment** screen, the following window is displayed.



6. Clicking “**Yes(Y)**” button on above **Confirmation** screen, the following window is displayed.

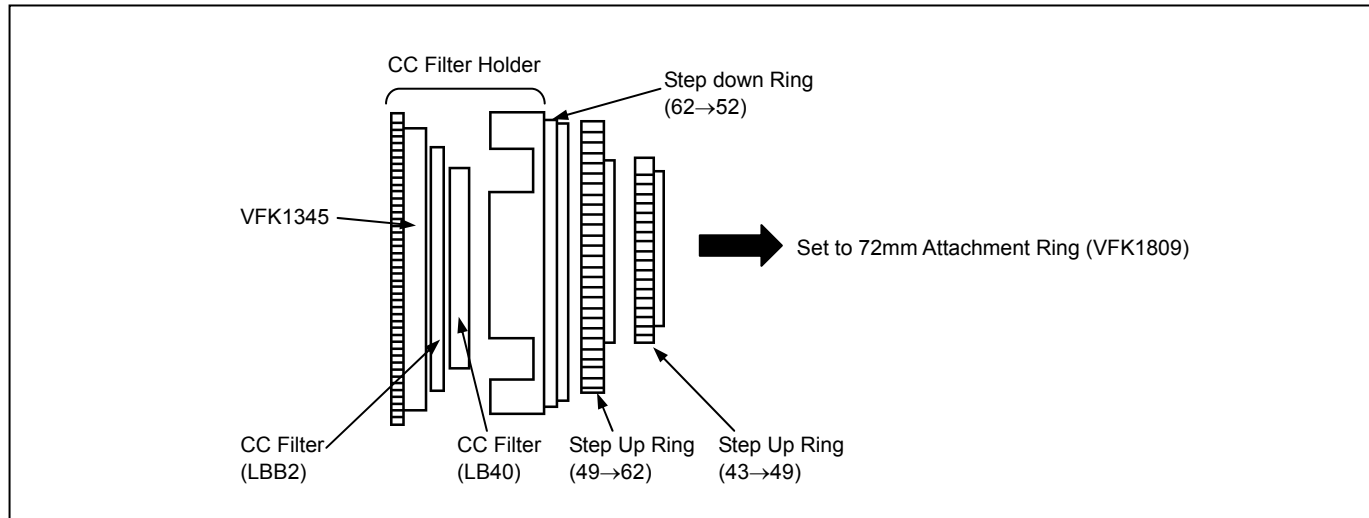


7. Clicking “**Yes(Y)**” button on above **Confirmation** screen, automatic adjustment starts.
8. When the adjustment is completed, the message “**PALOOK White Balance Adjustment Completed!**” is displayed on the **Camera Adjustment** screen.
9. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.
10. Clicking “**Yes(Y)**” button on below **Confirmation** screen, the message “**Execute next White Balance Adjustment**” is displayed on the **Camera Adjustment** screen. Please execute next adjustment (2-12-5. **White Balance Adjustment (White FL)**).

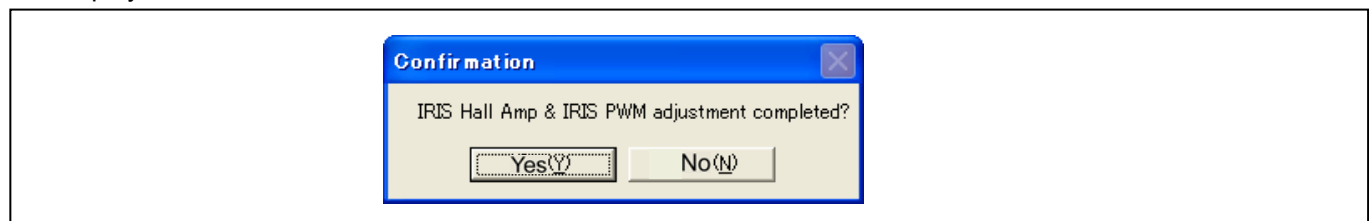


2-12-5. White Balance Adjustment (White FL) (Required only for NTSC model)

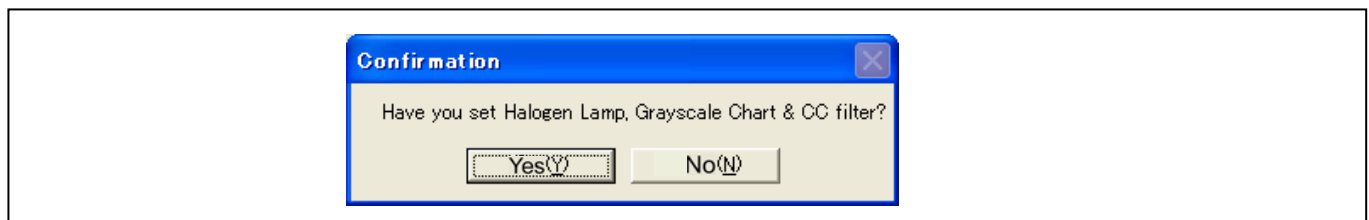
1. Set the Color Conversion filters (LB40: VFK1341) and (LBB2: VFK1885) to the CC Filter Holder (VFK1345).
2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



5. Clicking “**White FL WB Adj. (NTSC)**” button on **Camera Adjustment** screen, the following window is displayed.

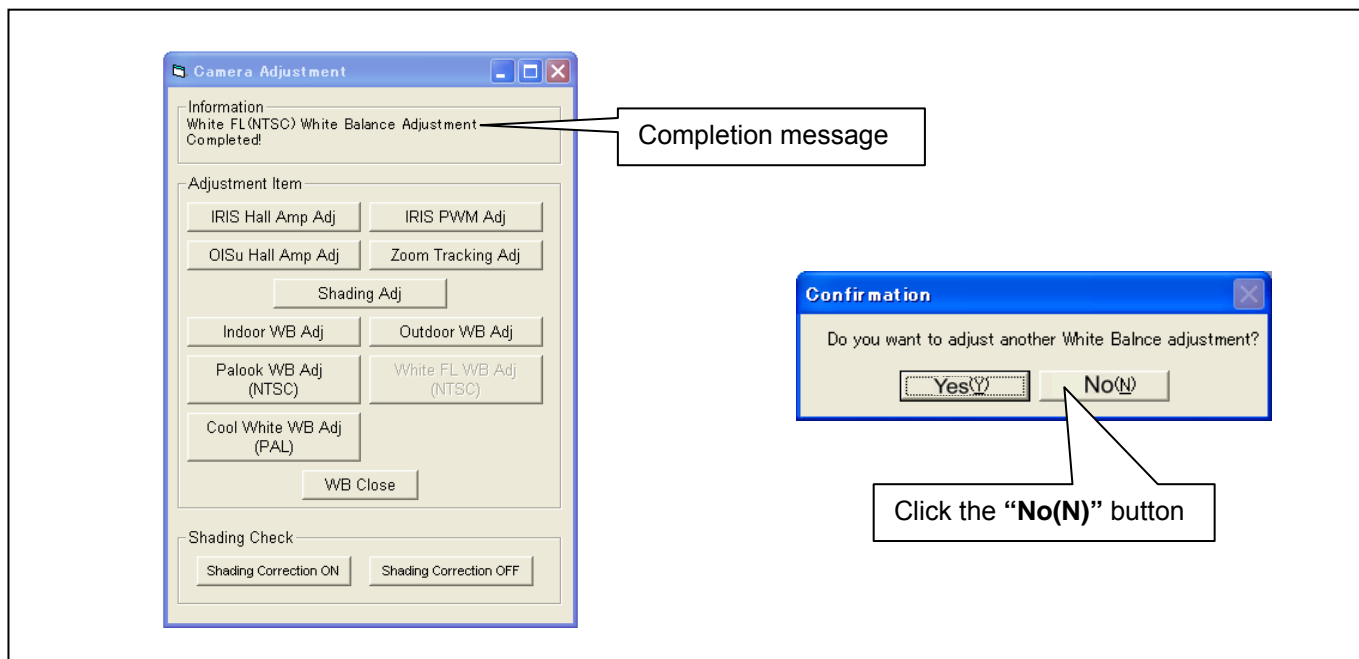


6. Clicking “**Yes(Y)**” button on above **Confirmation** screen, the following window is displayed.

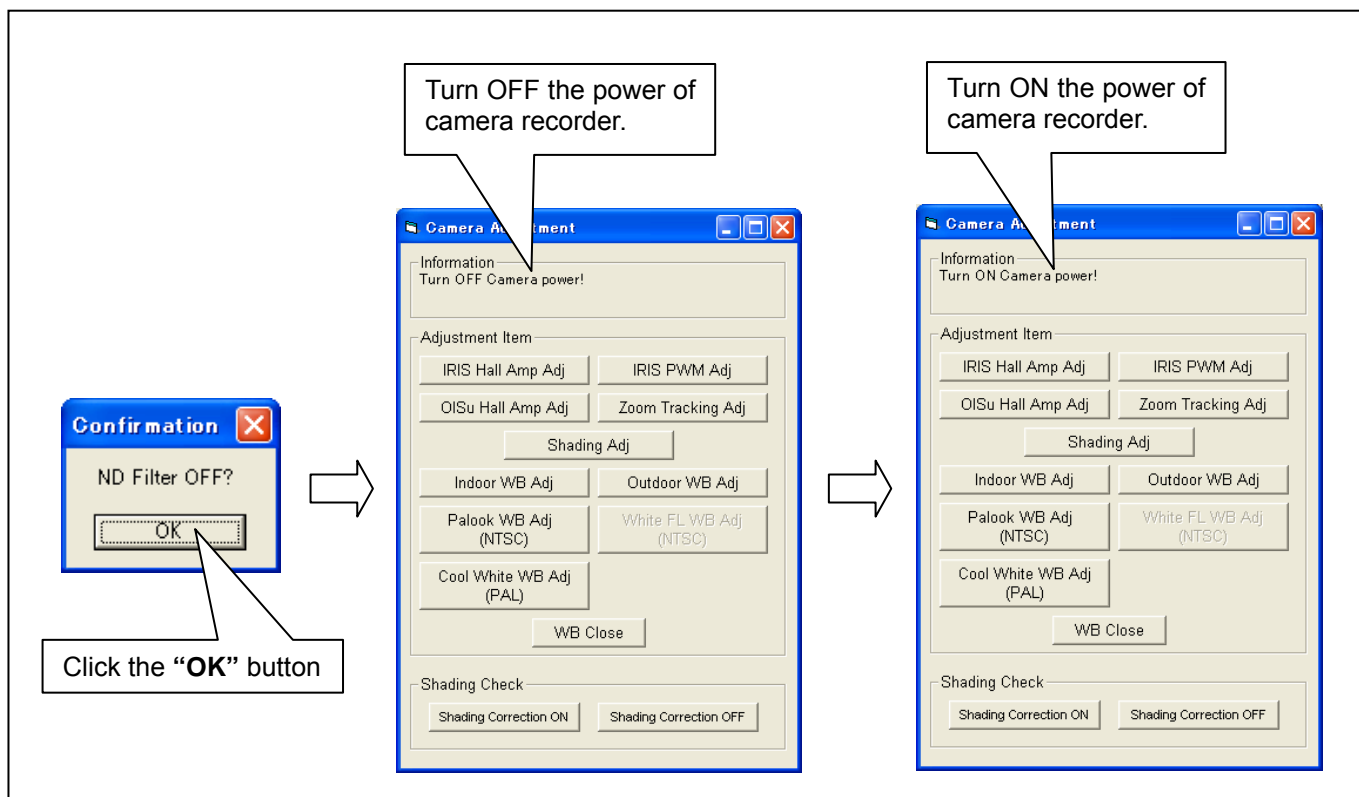


7. Clicking “**Yes(Y)**” button on above **Confirmation** screen, automatic adjustment starts.

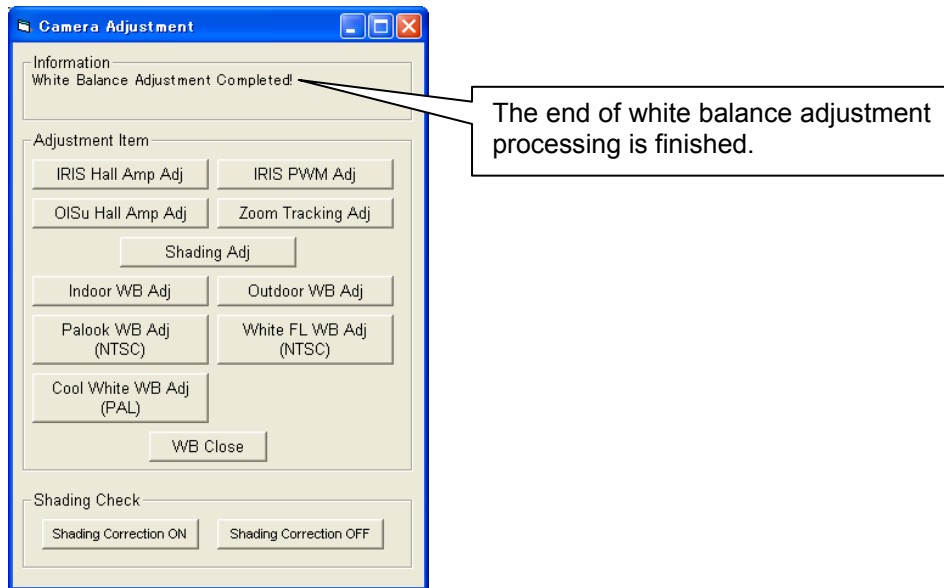
8. When the adjustment is completed, the message “**White FL(NTSC) White Balance Adjustment Completed!**” is displayed on the **Camera Adjustment** screen.
9. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.



10. Clicking “**No(N)**” button on above **Confirmation** screen to execute end of White Balance Adjustment processing, the window of the ND Filter confirmation is displayed.
11. Clicking “**OK**” button on **ND Filter Confirmation** screen, the message “**Turn OFF Camera power!**” is displayed on the **Camera Adjustment** screen. Please turn off the power of camera recorder.
12. When the power of camera recorder is becomes turned off, the message “**Turn ON Camera power!**” is displayed on the **Camera Adjustment** screen. Please turn on the power of camera recorder.

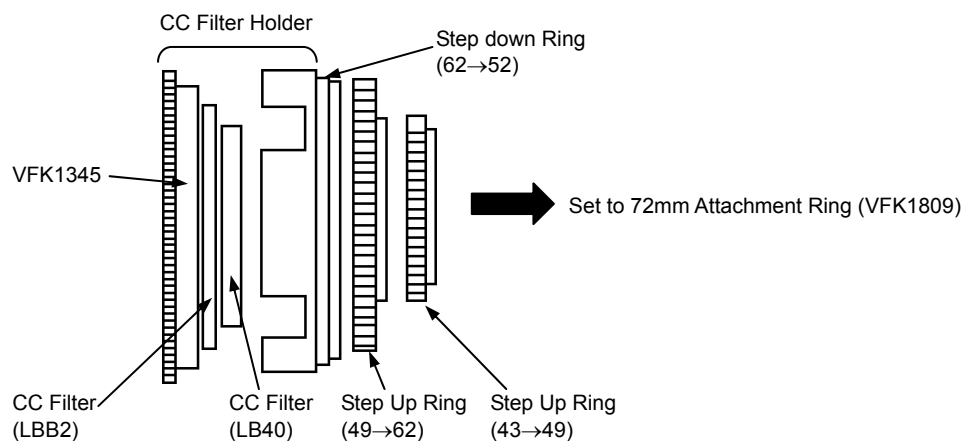


13. When the power of camera recorder is becomes turned on, the message “**White Balance Adjustment Completed!**” is displayed on the **Camera Adjustment** screen to inform the end of White Balance Adjustment processing is finished.

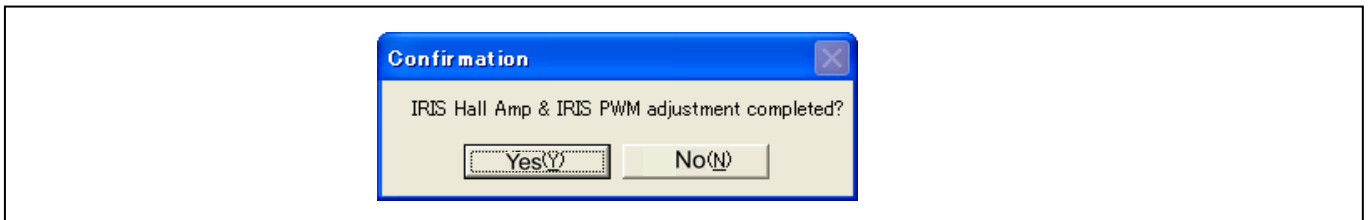


2-12-6. White Balance Adjustment (Cool White) (Required only for PAL model)

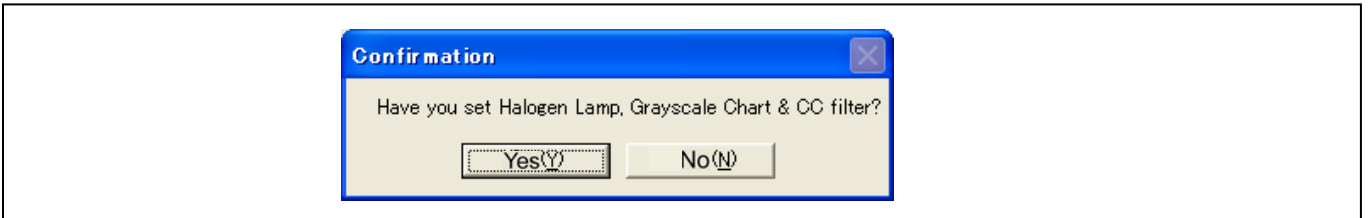
1. Set the Color Conversion filters (LB40: VFK1341) and (LBB2: VFK1885) to the CC Filter Holder (VFK1345).
2. Set the one Step-down Ring (VFK1346) and two Step-up Rings (VFK1659, VFK1660) to the CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to the front of Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



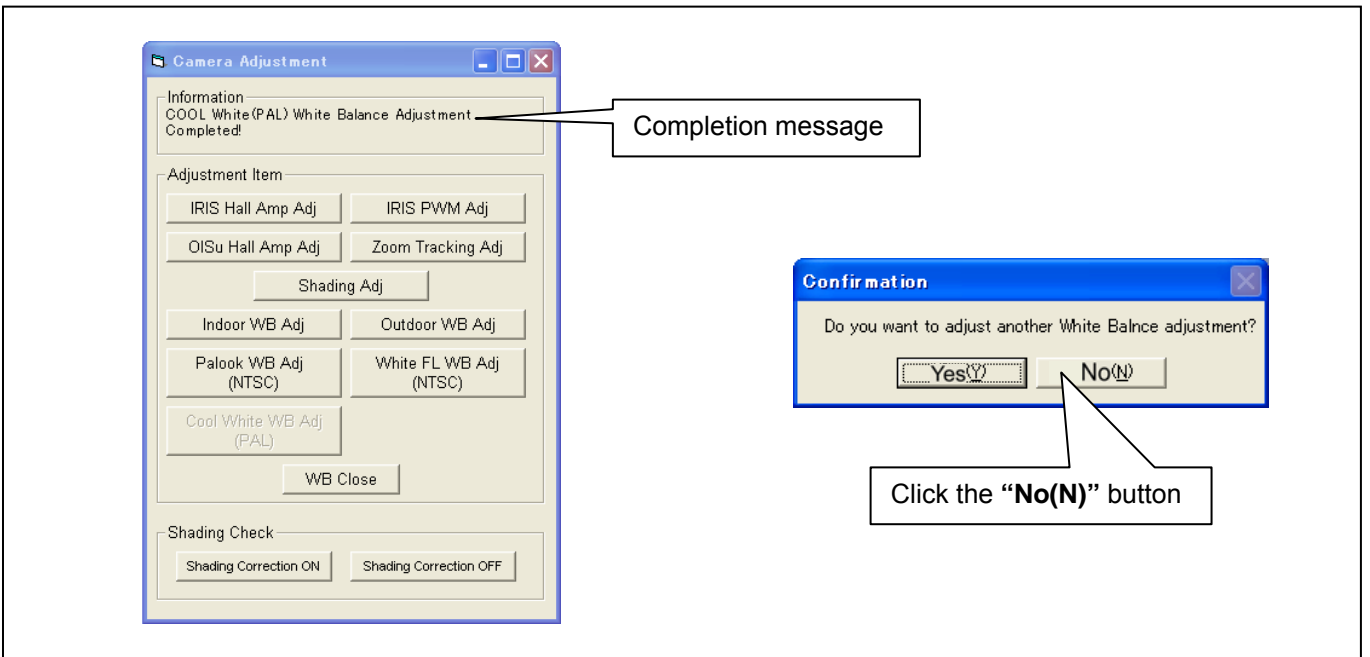
5. Clicking “**Cool White WB Adj. (PAL)**” button on **Camera Adjustment** screen, the following window is displayed.



6. Clicking “**Yes(Y)**” button on above **Confirmation** screen, the following window is displayed.

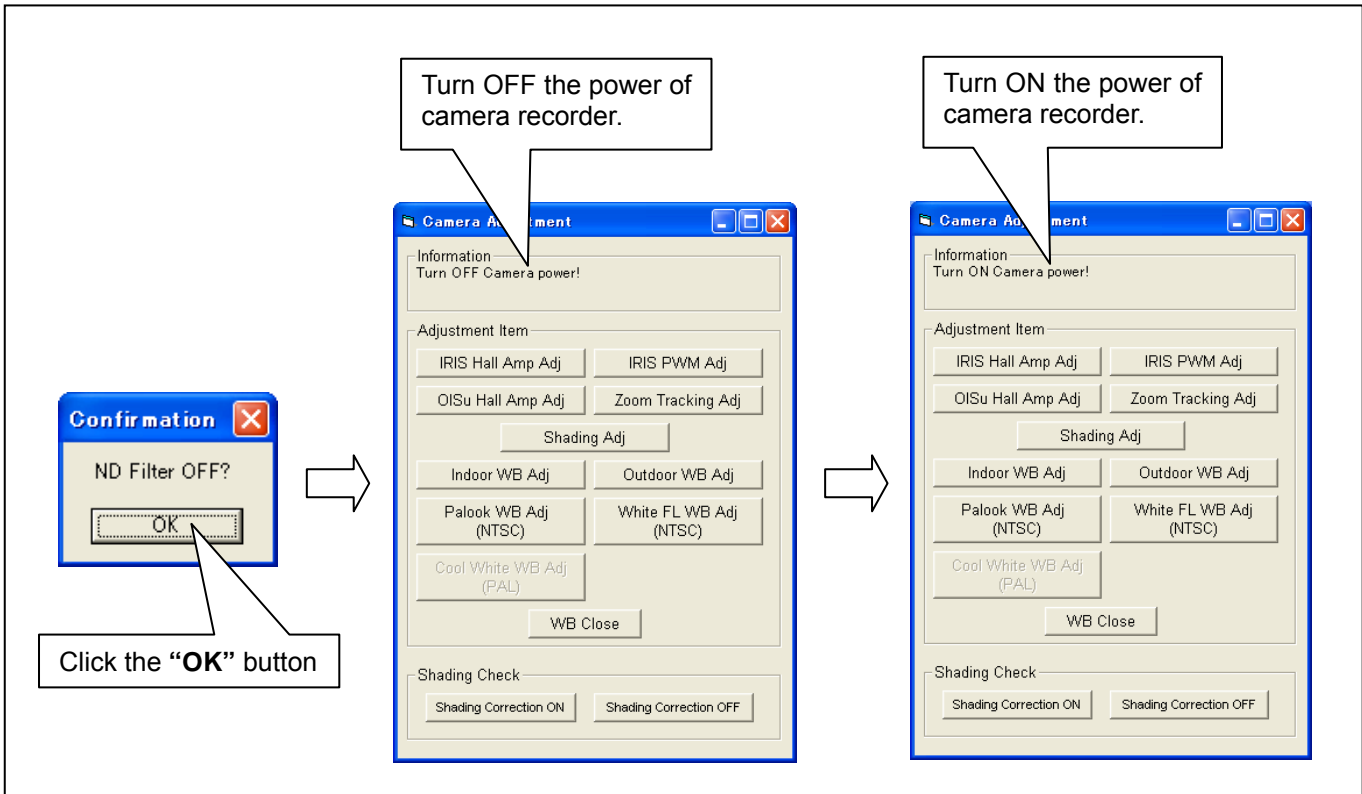


7. Clicking “**Yes(Y)**” button on above **Confirmation** screen, automatic adjustment starts.
8. When the adjustment is completed, the message “**Cool White(PAL) White Balance Adjustment Completed!**” is displayed on the **Camera Adjustment** screen.
9. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.

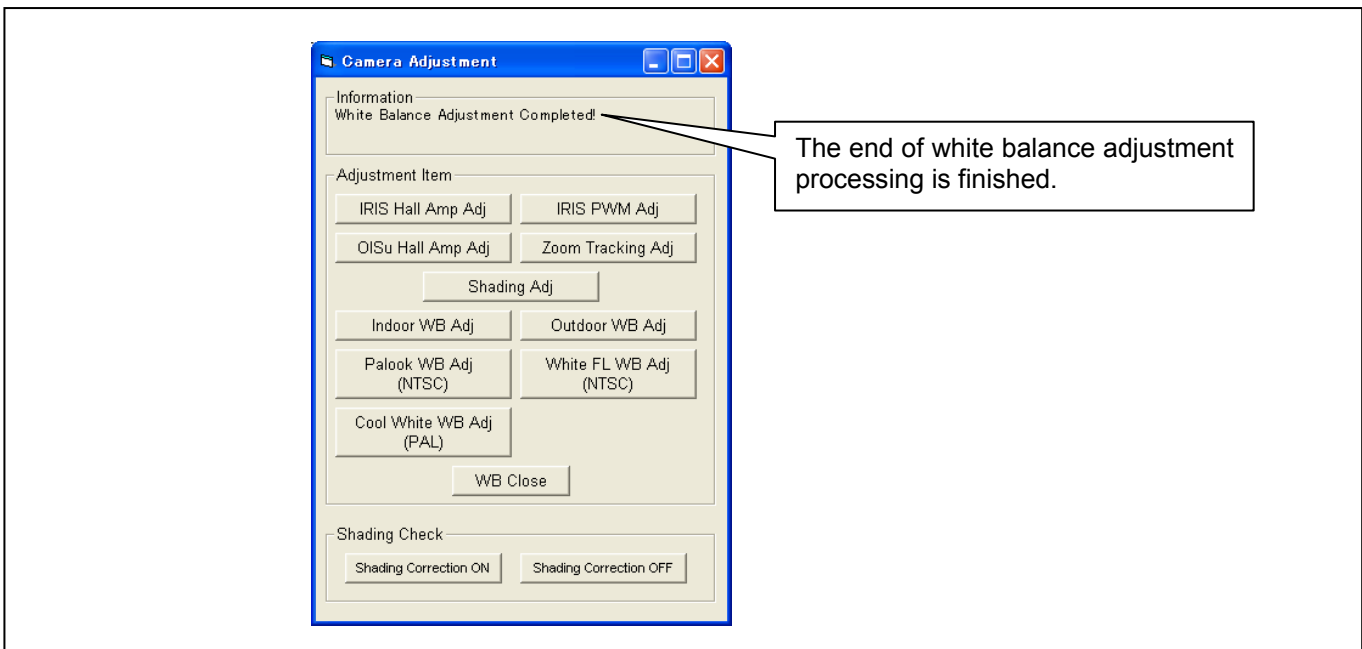


10. Clicking “**No(N)**” button on above **Confirmation** screen to execute end of White Balance Adjustment processing, the window of the ND Filter confirmation is displayed.

11. Clicking “OK” button on **ND Filter Confirmation** screen, the message “**Turn OFF Camera power!**” is displayed on the **Camera Adjustment** screen. Please turn off the power of camera recorder.
12. When the power of camera recorder is becomes turned off, the message “**Turn ON Camera power!**” is displayed on the **Camera Adjustment** screen. Please turn on the power of camera recorder.



13. When the power of camera recorder is becomes turned on, the message “**White Balance Adjustment Completed!**” is displayed on the **Camera Adjustment** screen to inform the end of White Balance Adjustment processing is finished.



2-12-7. Notes when the white balance is adjusted

1. When the adjustment is completed, the completion message is displayed on the **Camera Adjustment** screen.
2. The window of the adjustment continuation confirmation (another White Balance Adjustment) is displayed at the same time as the adjustment completion message is displayed.
3. When you end the adjustment by the item that the adjustment completion now, clicking **"No(N)"** button on **Confirmation** screen to execute end of White Balance Adjustment processing. When **"No(N)"** button is clicked, the window of the **ND Filter confirmation** is displayed.
4. Clicking **"OK"** button on **ND Filter Confirmation** screen, the message **"Turn OFF Camera power!"** is displayed on the **Camera Adjustment** screen. Please turn off the power of camera recorder.
5. When the power of camera recorder is becomes turned off, the message **"Turn ON Camera power!"** is displayed on the **Camera Adjustment** screen. Please turn on the power of camera recorder.
6. When the power of camera recorder is becomes turned on, the message **"White Balance Adjustment Completed!"** is displayed on the **Camera Adjustment** screen to inform the end of White Balance Adjustment processing is finished.

